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Nature in Avon

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Bristol Naturalists' Society

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Editorial

Change is the only constant in the natural world, and monitoring the processes of change is essential to understanding the world around us. Recording the natural world, and reporting what has been discovered, has always been a key function of the society, and the longer the duration of regular monitoring the greater the value of the results. This is demonstrated in a remarkable manner by David Trump's last summary of mammal records for the region. There are a series of maps taken from the National Biodiversity Network's website demonstrating how the records gathered by him from a small band of enthusiasts and sent on to the Bristol Environment Record Centre, have ensured that there is much better coverage of mammal distribution for this region than for those around. It is only unfortunate that our region is not formally recognised by them, so that two distribution maps have to be created for each species.

The 2009 Botany report is published here, but personal circumstances have prevented the 2010 report being produced in time- it will be printed next year. Changes in plant life in response to the unusually cold conditions of this year is the main subject of the phenology report.

Lichens are an important and ubiquitous form of life that is often ignored, and is the subject of two articles, one, by xxxxxoutlining the development of a Lichen Trail on the Downs, the other recording the details of the curating by Rhian Rowson of the City Museum of an astonishing international collection of over 4000 lichens gathered by Adolph Leipner, the founder of the BNS, whose German origins ensured wide European links. It not only shows the extraordinary breadth of his interests, but may also be the only survivor of early nineteenth century collections, many of which were destroyed in the last war.

There are summaries of two dissertations by members examining possible causes of House Sparrow decline. They demonstrate how simple studies can shed light on the processes of change among even the most common of species, and follow up Lorna Shaw's thesis, summarised last year. The recent decline of the House Sparrow teaches the lesson that nothing should be taken for granted, and that it is just as important to record the ordinary as it is to twitch the rare and strange. Common species play a far greater role in the structure of life than rare ones do.

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Weather report for 2010

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Data sources

The BNS began publishing weather data in 1872 with GF Burder's paper on rainfall in Clifton since 1853, and that led me to search for temperature data back to that date. From 1920 until its closure in 2002 the Long Ashton research station provided that data that was published, and since then I have used the Times daily report for Bristol, though since 2000 I have used my own rain gauge in Clifton. There is an excellent website at www.afour.demon.co.uk which has also traced records from some other sources back to 1853, and I have used these to fill in gaps. A long series is crucial to any understanding of the continuous process of climate change, which is normally defined as the average of the previous thirty years. I use the term "long-term average" to mean the average back to 1853. The term "since records began" is often used without a clear date reference, which can create confusion. Most meteorologists use the mean daily temperature as the basis, but many sources only quote the daily maximum and so I have used that figure throughout.

The annual average temperature in 2010 was cooler than 2009, and close to the long-term average of 13.6C. It was also the driest year since 1978. It began with a cold winter, the coldest since 1979, and continued with an average spring, a wet, warm summer, an average autumn, and the coldest December since 1916, the second coldest since 1853. Rainfall was exceptional in August. Overall rainfall was 747mm compared with the average since 1853 of 894mm.

Year	2001	02	03	04	05	06	07	08	09	2010
Av. Max °C	13.8	14.3	15.0	14.3	14.4	14.7	14.5	13.7	14.6	14.2
Ten year av. °C	13.8	14.0	14.2	14.2	14.2	14.4	14.4	14.3	14.3	14.3
Rainfall mm	832	1058	758	945	896	952	1107	1150	986	747
Ten year av. mm	995	995	963	954	956	974	997	1005	993	943

Table 1 Average mean maximum temperature and rainfall. The second row is the average for the ten years up to and including the year referred to.

Seasons.

The average for the **winter** (Dec. to Feb.) was 5.3ºC, the coldest since 1962/63. Rainfall at 59mm per month was below average. There were 51 frost nights (October to April), the last on May 4th. There were 35 nights cold enough to create ice, and 16 days with snow lying, including, unusually, six days before Christmas 2009. The coldest spell was of 13 days below 5ºC from Jan. 1st to 13th, preceded by nine days from Dec. 17th to 25th in 2009.

Spring (March to May) Average temperature was 14.3ºC, a little above the long term average of 12.9ºC. Rainfall at 38mm per month was drier than average, and the driest since 1990.

Summer (June to Aug.) Average temperature was at 22.8ºC, warmer than 2009, but it was the third wet summer in a row, and August was the wettest since 1992.

Autumn. (Sept.-Nov.) Average temperature at 14.8ºC was normal, and September was unusually dry.

Seasonal Comparisons To put the 2010 seasonal average temperatures into perspective, Table 2 shows the seasonal temperature extremes, with their year, the average since 1853, and the difference between 2010 and the long term average.

	2010	Min	Max	Av, since 1853	Diff.
Winter	5.3	1917-2.5	1920-10.6	7.5	-2.2
Spring	14.3	1887-10.4	1893-16.6	12.9	1.4
Summer	22.8	1883-18.0	1976-23.9	20.2	2.6
Autumn	14.8	1915-10.6	1959-16.8	13.9	0.9
Annual	13.9	1892-12.1	1921-15.6	13.6	0.3

Table 2 2010 seasonal average temperature compared with minimum, maximum and average since 1853.

	2010	Min	Max	Av. since 1853	Diff
Winter	59	1964-21	1995-154	78	-19
Spring	38	1893-17	1981-107	60	-22
Summer	94	1995-11	1879-140	73	21
Autumn	71	1978-26	1935-173	87	-16
Annual	62	1864-49	1882-104	75	-13

Table 3 Average monthly rainfall in mm for each season in 2010 showing the maximum, minimum and average since 1853, and the difference between 2010 and the average since 1853.

Monthly percentage deviation in 2010 from the average since 1853.
Temperature Both January and December were very much colder than normal.
Rainfall Nine months were below average, but August was much wetter than normal.

	Temp	Rain			Temp	Rain
Jan	-44	-29		Jul	8	25
Feb	-12	-2		Aug	18	85
Mar	6	-8		Sep	28	-49
Apr	20	-58		Oct	5	-19
May	5	-42		Nov	-15	12
Jun	14	-40		Dec	-57	-80

Table 4 Monthly percentage deviations in 2010 from the norm

Monthly Summary 2010

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Av.
Temp °C	4.4	6.7	10.6	15.2	17.1	21.9	22.4	24.1	23.1	14.8	8.7	3.4	14.4
Rain mm	60	59	55	24	36	37	87	157	40	77	97	18	62

Table 4 2010 Monthly average temperatures and total rainfall

January The first two weeks were exceptionally cold, with frost every night. Snow fell on 6th and stayed until 15th. Winds were easterly around a high pressure system. The rest of the month was generally sunless, with northerly winds and temperatures around 8°C.

February Generally dominated by high pressure, low temperatures, sunless days and northerly winds, but there were only seven frost nights.

March The first ten days saw high pressure, bright sun, north-east winds and frosts, and temperatures around 8ºC. Temperatures rose from 12th as winds switched to the south and west, briefly reaching 14ºC on 17th, with winds from the south east, but only a little rain fell.

April Dominated by high pressure, north-east winds, and sunshine, averaging 6.9 hours a day, greater than the long term average for June. Temperatures were around 14ºC, but peaked at 20ºC on 28th.

May. The pattern of dry sunny days continued- there were only five sunless days in the month, and north winds dominated until 12th when westerlies took over, and in the warmest spell of the year from May 20th to 26th the temperature reached 26ºC for two days.

June Began with a hot sunny spell from 4th to 6th, but it was much cooler with north winds until 20th. It was another unusually dry month, such that total annual rainfall was 90mm below normal by the end of June. The last ten days were hot, dry and sunny with southerly winds.

July The fine warm dry spell continued for the first ten days, and then a much needed wet spell followed on the 12th and culminated with 36mm on 23rd. The final week was dry. It was a remarkably sunless month, with only 60% of normal sunshine hours.

August There were only six sunless days, but temperatures were around 24ºC, and there was a very wet spell from 19th to 28th when 101mm of rain fell.

September. A dry month with above average temperatures and mostly westerly winds.

October The first ten days were warm, and dry with southerly winds, which then shifted to the north as high pressure took over and temperatures fell. The first frost was on 17th, followed by four others. Temperatures rose under the influence of southerly winds in the last ten days.

November The first twelve days were wet and windy, with a small storm on 12th associated with a deep depression. On 21st the winds shifted to the north, high pressure built up over Iceland, temperatures fell abruptly, and on 27th snow fell, the first November snow since 1952.

December A wholly exceptional cold month, with an average temperature that was the coldest since 1916, and the 6th coldest since. There were 23 frost nights and 19 days with snow cover.

Weather Extremes.

The table below gives figures for extreme annual events over the past decade, enabling the extreme events of 2010 to be put in perspective. There seems to be no pattern in these figures, except for the number of days without any sun to increase from around 50 to around 100. It is also interesting that, contrary to common perception, two days in every three have no rain at all The number of snow days and frost days in 2010 is unprecedented in recent years.

		1	2	3	4	5	6	7	8	9	10
Hottest day	c	30	26	32	28	30	35	27	28	28	26
Coldest day	c	2	0	1	3	0	0	2	2	-1	-5
Wettest day	mm	55	60	45	45	47	39	40	35	36	36
Sunniest day	hr	14	15	15.1	13.9	14.8	14.7	14.1	14.9	14.7	15.6
Longest dry spell	days					14	22	24	16	20	24
Longest wet spell	days					7	11	8	8	8	7
Frost, nights	days	46	14	49	30	32	33	25	44	42	76
Snow lying	days	0	0	0	6	2	2	2	1	19	33
Storms	days					1	3	6	4	1	1
Hotter than 25C	days	15	3	22	13	14	27	1	7	5	3
Colder than 5C	days	34	17	25	15	26	39	18	14	37	60
More than 10hr sun	days	45	30	42	19	38	36	45	29	49	46
No sun	days	62	78	56	90	89	107	99	95	95	106
No Rain	days			263	231	248	234	238	228	265	269

Bristol Botany in 2009

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"I am grateful for your most friendly and (I fear) flattering letter concerning my book. Such an appreciation is most encouraging and does one good." (J. W. White, 24 May 1912, soon after the publication of his Flora of Bristol, replying to H. J. Riddelsdell who had already been working on the Flora of Gloucestershire for several years.)

Introduction

J. W. White's letters were treasured by their recipients and in 2009 I acquired my fifth, which is transcribed and annotated in our December 2009 bulletin. Written on 24 May 1912, it responds to H. J. Riddelsdell's comments on White's recently published *Flora of Bristol*. The letter reads as one half of a botanical conversation between these two fine field botanists and authors as they 'talked' about their predecessors, their plant finds locally and abroad, and debated the naming of some difficult plants. On 30 December at our Botanical Section members' evening Mark Kitchen and I took our parts and read out my expanded dramatisation of an imagined botanical walk "Under Cook's Folly Wood" (BNS Bulletin for February 2010).

With only a passing reference to my African tax work, I was featured in Deloitte's recent global annual review under the title of 'the botanist', with a photo showing Libby Houston and me on Observatory Hill, talking about *Scilla autumnalis*, and admiring Brunel's Clifton Suspension Bridge and Leigh Woods. Brunel's part in the conservation of that rare plant is now well-known, when in the early 1830's he was persuaded to transplant a turf containing the some bulbs from the building site (once apparently known as Hyacinth Point) to the cliffs below.

Quite plausibly, Brunel was predisposed to this act through connections with naturalists in his wife's family. One of his brothers-in-law was a Fellow of the Geological Society. By another he was the Uncle to one of those rare lady members of the Botanical Society of London, Sophia Brunel Hawes (1822-1870), so she might have even heard the story from Brunel. Sophia later married the future Governor of Ceylon, Charles Justin MacCarthy (1811-1864) and there met, if they had not met before, G. H. K. Thwaites, who was in charge of the botanic gardens at Peradeniya. Thwaites was the dominant figure in Bristol botany in the 1840's and had been the Bristol secretary of the BSL. In 1855 he named "the most beautiful orchid on the Island", after her as *Dendrobium maccarthiae*, or Mrs MacCarthy's Dendrobium. It appears on a Sri Lankan postage stamp issued in 1994 (see BNS Bulletin for May 2009).

Another postage stamp with connections to Bristol botany appeared in Britain in May 2009. *Allium sphaerocephalon*, **Round-headed Leek** was one of ten of Britain's rarest wild plants separately illustrated in the set produced for the Royal Mail's on-going "Action for Species" series on the occasion of the 250th anniversary of the founding of Kew Gardens. The opportunity was taken by Bristol Zoo to highlight the Avon Gorge & Downs Wildlife Project and their Plant Conservation Week. Times have of course changed: referring to publicity of the same plant in 1935, H. Stuart Thompson wrote, "I firmly believe silence is better".

Overview of plant records

Three new whitebeam species endemic to Cheddar Gorge, **S**, were described in August 2009: *Sorbus cheddarensis*, **Cheddar Whitebeam**; *S. eminentoides* **Twin-Cliffs Whitebeam**; and *Sorbus rupiculoides*, **Gough's-Rock Whitebeam**. Our BNS member Libby Houston recognised the species - less than 20 known individuals in each case - during surveys and they are published under her name (the third with Tim Rich). Otherwise, only one native plant appears to be new to the Bristol area and v.c.6: *Callitriche brutia* var. *brutia*, **Pedunculate Water-starwort** (**S**). However, it remains possible that the novelty owes more to taxonomic reorganisation in this difficult group.

There are a number of reports of the persistence of species at known sites, or the refinding of species thought lost to the region. The variety *compositarum* of the **Common Broomrape** *Orobanche minor* has, after a deliberate search, been shown to persist at Berrow dunes. *Gagea lutea*, **Yellow Star-of-Bethlehem** has remarkably been refound at Lily Combe - on private land - where it was thought to have been destroyed in 1989 by "in-filling of the valley and the levelling of the ground". *Reseda alba*, **White Mignonette**, has once more been found at Bristol Docks, having apparently last been seen in the region in 1977. *Medicago polymorpha*, **Toothed Medick** was known from about 1880 to 1945 about the Avon Gorge but it has only been seen at Weston-super-Mare in recent years; it has again turned up in the northern part of the region. *Molinia caerulea*, **Purple Moor-grass** used to occur as a native on the Bristol Downs, but died out after 1920; it has now turned up as an adventive in a quarry under Leigh Woods. The apparent loss of *Arabis scabra*, **Bristol Rock-cress** from Penpole Point is reported, rather in the hope that the converse will prove to be revealed another year.

The following alien plants are not reported in the main text of *Flora of the Bristol Region* (*FBR*) or in Bristol Botany 2000 or subsequently. They are therefore either new to the Bristol district or have not recently been seen there, or were overlooked during the compilation of the *Flora*. Where specified, they are new to one or other county, vice-county or part of the Bristol region.

The list begins, remarkably, with four ferns from Bath basements new to Somerset (though one had just earlier been found, but not identified, in woodland in Ashton Court): *Pteris nipponica*, **Table Fern**; *Pteris umbrosa*, **Shady Brake-fern**; *Cyrtomium fortunei*, **Fortune's Holly-fern**; and *Polystichum tsus-simense* **Korean Rock-fern**.

Other alien additions to *FBR* are: *Corydalis cheilanthifolia*, **Fern-leaved Corydalis (S)**; *Reseda alba*, **White Mignonette**; *Elaeagnus umbellata*, **Spreading Oleaster** (Somerset); *Coriandrum sativum*, **Coriander**; *Nicotiana x sanderae* (*N. alata x forgetiana*), **a Garden Tobacco**; *Forsythia x intermedia*, **Forsythia**; *Knautia macedonica*, **Crimson Scabious** (Somerset and perhaps new to Britain); *Pilosella flagellaris* ssp. *flagellaris*, **Spreading or Few-headed Mouse-ear-hawkweed** (v.c. 34); *Sasa palmata*, **Broad-leaved Bamboo**; *Pontederia cordata* **Pickerelweed** (Somerset, but perhaps planted). *Cordyline australis*, **Cabbage-palm** (v.c. 6).

At a finer scale, several records are apparently new to the 10 km squares in which they occur, so far as the standard published sources reveal. These are marked with a * preceding the grid reference in the main text. Many are casuals but *Potamogeton trichoides*, **Hairlike Pondweed** in ST58 is notable - JPM had plainly got his eye in. There are a number of species reported here which are new to the flora of the Avon Gorge, and several apparently new to Steep Holm.

Studies in Sorbus

In August 2009, three further papers on whitebeams were published in *Watsonia* 27:4. Correcting an oversight in the February 2009 paper describing five new Avon Gorge taxa (one species and four hybrids, see BB 2008), Tim Rich validated the names with explicit references to (holo)type specimens (page 370). These are all at the National Museum of Wales. A paper on the diversity of Sorbus in the Lower Wye Valley (Rich, T. C. G, Houston, L., Charles, C. A. & Tillotson, A. C., pages 310 – 313) needs to be noticed here because it has some comparisons to the Avon Gorge, where it states there are 22 taxa, the richest British site.

On pages 283-300, there is an account of the Whitebeams of Cheddar Gorge, with description of three new species (Houston, L., Robertson, A., Jones, K., Smith, S. C. C., Hiscock, S, & Rich, T. C. G.). Eight species and several possible hybrids were recognised there.

Sorbus cheddarensis L. Houston & Ashley Robertson, **Cheddar Whitebeam**, was nicknamed "pinstripe" when Libby first began to recognise it in 2005 from the prominence of the veins on the greenish-white underside of the leaf. It is somewhat akin to *S. porrigentiformis* but has elliptical rather than obovate leaves. 19 individuals were confirmed on the northern side of the gorge in ST4654 and ST4754. Six had been damaged by goats.

S. eminentoides L. Houston, **Twin-Cliffs Whitebeam**, was recognised by Libby in the field in 2006. As the name indicates, it is somewhat akin to *S. eminens*, **Round-leaved Whitebeam** but the leaves are not quite so round, and are more coarsely and irregularly toothed. 15 individuals have been confirmed, all on the south side of the gorge in ST4653.

Whether or not *S. eminens* occurred at Cheddar had been the subject of speculation and it was still unmentioned in the *Somerset Atlas* of 1997. My own attempt at collecting it at Cheddar around 1980 proved (det. T. Rich) to be a roundish *Sorbus aria*, **Common Whitebeam**. Libby managed to identify 200 individuals of *S. eminens*.

Sorbus rupiculoides L. Houston & T. C. G. Rich, **Gough's-Rock Whitebeam**, was also recognised by Libby in 2006. It has narrowly obovate leaves, greenish-white below, and unlike *S. rupicola* (which does not occur at Cheddar or Bristol) the leaves are acute rather than rounded. 12 trees were identified in a small area on the south side of the gorge in ST4653.

Bristol Botanists

I have managed to continue my monthly essays on Bristol botanists for the BNS Bulletin. They remain somewhat ephemeral (the electronic copies remain online only for a year) and are therefore summarised here, continuing from April 2009 to February 2010. A note on Noel Sandwith, for many years the compiler of Bristol Botany, is added.

Miss Martha Maria Atwood (c.1810-1885)
In the September 2009 Bulletin I described my identification of the remains of Miss Atwood's personal herbarium, which had previously been regarded as lost. The website Herbaria@home (http://herbariaunited.org/atHome/) has photographs of tens of thousands of herbarium sheets, one of which was the eyebright specimen mentioned in Swete's *Flora Bristoliensis* with Miss Atwood's comments, in her distinctive hand. The particular use of printed labels and names cut out of a book are also characteristic. At the time of writing over 100 of her specimens have been catalogued, going back to 1836.

Noel Y. Sandwith (1901 -1965)
The name of Noel Sandwith first appears in print as the finder of *Carum carvi*, **Caraway**, by Hotwells Station in 1911, and as White marks it with a sign of exclamation, he and his mother Mrs C. I. Sandwith may well have shown it to his predecessor compiler of Bristol Botany. In *BSBI News* for September 2009 (no 112: pages 25-17) David Allen tells the story of the "abortive 'Penguin' Flora of the British Isles". It seems this was at first intended by Frances Partridge, one of the Bloomsbury Group, to be a 20-volume series on the scale and plan of Sowerby's *English Botany*, with the art-work by the young Richard Chopping. Around 1946, Noel Sandwith was brought in as a professional advisor and accompanied them in their quest for specimens for illustration. In one particular trip to look at rare orchids in Wiltshire in 1954 she describes him as walking "with a long springing tread, his eyes flashing with expectation behind his gold-rimmed spectacles" (see Peter Marren's book, *Britain's Rare Flowers* (1999) and compare another recollection in the first paragraph of BB 2008). It seems the artist asked him why he had never married, to which he replied, "Because of my great love for the flowers".

Nothing was ever published of this Flora but a proof copy of the first volume was known (in 2005) to be in a Kew bookseller's stock. Sandwith also hoped to write a new Flora of Bristol, to judge from the extensive card index he compiled. This was passed on to A. J. Willis and is now in the BNS Library.

E. Horace Swete (1827-1912)
In the October and November 2009 bulletins I wrote about what became of the author of the *Flora Bristoliensis* of 1854 when he left Bristol soon afterwards. Swete was a member of the Bristol Microscopical Society where he would have met Stephens and Rootsey, authors of earlier Bristol plant lists. He also became a supernumerary 13th member of the Bristol Medical Reading Society in 1855, rather supporting the later piece of gossip by Thomas Flower: that he wrote to *Flora* hoping it would "introduce him to practice".

Swete had a large family and an inventive mind, and a social outlook on medical practice, and moved successively to Wrington and Weston-super-Mare, Leamington Spa, and Worcester, where he seems to have been a successful Public Analyst, working no more than half a mile from where Miss Atwood then lived. He certainly remained in touch with Robert Etheridge (later President of the Geological Society), who had helped him with the introductory material in the *Flora*, and who in a testimonial stated that Swete had preceded him as the lecturer in botany to Bristol medical students. (White had been unable to confirm this.) Swete was a member of the Geological and the Anthropological Societies and a regular letter-writer to *The Lancet*. He had simply moved on.

H. Stuart Thompson (1870-1940)
In the May 2009 Bulletin I told the story of a picture of *Caltha palustris* painted by Thompson's Bridgwater relative, Miss Gulielma Stephens. The article shows the picture on Thompson's wall (probably in his Clifton apartment around 1922) together with his herbarium, plant press and vasculum, and some of his books. In my possession for about 30 years, the painting is now (as shown) with Kay Ungless, a grand-daughter of Thompson's sister Agnes, who is buried with him and their father at the Wembdon Road Cemetery near Bridgwater. Some of Thompson's papers are in our Society's library, including scrapbooks of his many newspaper and journal articles and the proofs of one of his books of Alpine flowers.

George Henry Kendrick Thwaites (1812-1882)
With the April, May and July/August 2009 newsletters I reached the ninth part of my account of Thwaites as a "naturalist pure and simple". The short preface of his *Enumeratio Plantaurum Zeylaniae* (1864), an enumeration of Ceylon plants, reveals two aspects in which his thoughts were of England: it draws on his correspondence with Charles Darwin and includes a list of seven alien plants, introduced with grass seed, all of which would have been familiar to him around Bristol. I also described something of Thwaites' entomological interests, both in Bristol and in Sri Lanka, where he was Director of the botanic gardens. Whilst Swete was putting the finishing touches to his *Flora Bristoliensis* in 1854, Thwaites wrote, "I often wish each day were double its length" so that he could pursue entomology as vigorously as botany.

Bristol botany bibliography
Nature in Avon Volume 68, our Proceedings for 2008, has (apart from BB for 2007 and 2008) two papers with botanical records. Richard Bland's Phenology report reveals that during a New Year's Day's walk on the Bristol Downs he has found nine plants in flower on at least seven of the nine walks since 2000, amongst a running total of 45. Richard Bland also contributed an account of the Tyntesfield Arboretum.

In a paper in the *Journal of Applied Ecology* for 2008, (**45**, 1419 - 1427) entitled, "Pollinator networks, alien species and the conservation of rare plants: *Trinia glauca* as a case study", L. G. Carvalheiro, E. R. M. Barbosa and J. Memmott, all of the School of Biological Sciences, Bristol University, mapped out the network of insect pollinators of the rare **Honewort** at its main remaining site in the Avon Gorge and confirmed that ants are the main pollinators.

A third of the visits of these ants whilst *Trinia* was in flower were to alien plants, mainly *Cotoneaster horizontalis*, **Wall Cotoneaster**, (for feeding) raising the interesting question - if this invasive alien were removed, would this limit the pollinator population and accordingly jeopardise the seed set necessary for the survival of this monocarpic dioecious species? My own view is that the plant is highly attractive to the pollinators and that in the Avon Gorge habitat stability is far and away the main conservation challenge as its sites continue to succumb to road safety works, shading and unwitting trampling.

The third volume of Sell and Murrell's *Flora of Great Britain and Ireland* was published in 2009. It includes the legumes, umbellifers, and the dead-nettle and figwort families. It is hugely valuable for alien and native varieties and forms of our native plants, particularly for coastal variants, which are begging out for attention in our area. Do we, for instance have the var. *neglectus* of Wild Thyme (leaves with few eglandular hairs on the upper surface; inflorescence rounded and not elongate)?

Plant records

The area covered by this report remains that defined and mapped in White's Flora of Bristol (1912); in turn this reflected the scope of interest of the Society almost from its inception. White described the area as an irregular right-angled triangle of 720 square miles from Dursley in the north southwards to the east of Bath to Frome, and thence west to the Severn at Huntspill, south of Burnham.

Following White, the part falling into the Watsonian vice-county of West Gloucestershire (v.c.34) is designated **G**. Except for a small portion south of the New Cut, the boundary follows the Avon to Swineford, and from there it proceeds north of easterly, five km north of the centre of Bath. The southern part, designated **S**, falls within North Somerset (v.c.6). The *Flora of the Bristol Region* (2000) mapped the vascular plants of the former administrative county of Avon and therefore excluded a strip of White's triangle some 13 km south of Brean Down; that area is mapped at a lower scale in the *Atlas Flora of Somerset* (1997).

The plant records are arranged into two groups, Natives and Archaeophytes, and Aliens. Archaeophytes are plants that behave as natives but were or seem to have been anciently introduced by man. Neophytes (also known as aliens) are plants found in the wild but which are more recent introductions. These are often merely casual – neither surviving long nor regenerating. Ideally the groups would be distinguished at the local rather than the national level. It is becoming increasingly difficult to separate planted from accidentally arrived alien species using the definition "found in the wild".

The plant names and sequence within both lists follow the second edition of Stace's *New Flora of the British Isles* (1997) are therefore compatible with the *Flora of the Bristol Region*. Accordingly, the Latin names (*in italics*), which necessarily take precedence, despite the standardisation of English names (**in bold type**), can be unambiguously cited without authors' names, except for the occasions when something new is reported. The vice-county catalogues, online at the BSBI website, and their *New Atlas of the British and Irish Flora* (2002) and its CD and online update are also useful for assessing the importance of the plant records. A reasonable familiarity with the contents of a contemporary botanical library is assumed. In many cases online or unpublished resources are used.

Where new to Gloucestershire or Somerset, or to the vice counties v.c.34 (West Gloucestershire) or v.c.6 (North Somerset), this is stated. The symbol * before a grid reference designates a record apparently new to the 10 km square; it can be difficult to be sure. Where the symbol * appears before **G** or **S**, or a site name such as the Avon Gorge, it indicates the species is new to that part of the Bristol area, having previously been recorded only in the other district. For aliens new to the region a brief description is often given, with more detail where not mentioned in Stace's *New Flora*.

Following the practice commenced in Bristol Botany in 2006, 1 km grid references are again given. The plant records are more precisely localised- geographically or by habitat- where possible, and where it seems important to do so. Multiple records for the same species are consistently sequenced from south to north in **G**, and from north to south in **S**, going from west to east. This roughly corresponds with White's lists.

Names of the principal contributors of the 1200 or so plant records received are abbreviated as below, listed alphabetically by surname. The full list of submitted records may be obtained from the author or office bearers of the Botanical Section. *FBR* refers to the *Flora of the Bristol Region*, published in 2000 and unattributed comments are those of the author (CML). BB abbreviates this title, *Bristol Botany* which has been issued in that name for almost an unbroken century.

RLB	Richard Bland	CH	Chris Hurfurt
DB	David Brookman	CK & MARK	Clare and Mark Kitchen
RGC	Robert (Bob) Corns	CML	Clive Lovatt
RSC	Robert (Bob) Cropper	JPM	John Martin
HJC	Helena Crouch	EJM	Elizabeth (Liz) McDonnell
CVWG	Cam Valley Wildlife Group	RGM	Richard Mielcarek
SRPG	Somerset Rare Plants Group	PM	Pam Millman
RJH	Rupert Higgins	EN	Edward Niblett
PH	Peter Hilton	FR	Fred Rumsey
LH	Libby Houston	AGS	Anthony (Tony) Smith
NH	Nick Hudson	MW	Margaret Webster

I have received a quantity of new and unusual alien plant records from David Brookman of Bristol, some of which had previously been announced in his online plant-hunter's diary at http://www.wildaboutbritain.co.uk/. These include garden plants and casuals which have escaped the eyes of our Society members and familiar friends. Many are undoubtedly correct, within the routine difficulties of botanical identification of garden plants, but some might have been too close to gardens, or are in allotments, or might have been planted, and may not yet qualify as "in the wild". I have not done justice to these records by including just a few of them so far; they will be given their proper space and precedence in these pages in years to come.

NATIVES AND ARCHAEOPHYTES

Equisetum fluviatile **Water Horsetail** Boggy pool by Smitham chimney, East Harptree Woods, ST5554, **S**, RSC, where also noted by SRPG in 2008, with large patches of atypical more branched plants beside nearby rides.

Botrychium lunaria **Moonwort** Still in Goblin Combe, ST4765, **S**, as reported in *FBR*, one fertile frond under Yew, JPM. Four fronds in two places in the GB Gruffy nature reserve of the Somerset Wildlife Trust, south east of the swallet, ST4756, **S**, HJC & FR.

Gymnocarpium robertianum **Limestone Fern** Still at Goblin Combe, ST4764, **S**, JPM, who reports 60 fronds on lightly shaded scree over five square metres. This is the only site in *FBR* and a photo there shows about 15 fronds over about a quarter of a square metre.

Dryopteris carthusiana **Narrow Buckler-Fern** One plant in a wet field, NW of Beacon Hill, ST6446, **S**, RSC.

Blechnum spicant **Hard-fern** Scattered along West Twin Brook, Blackdown, ST4757, **S**, RSC. Along shady banks of field margins, Beacon Hill, ST6446, **S**, RSC, who reports a good amount, first seen by him in 1976 (see BB 1976).

Nymphaea alba **White Water-lily**, Clevedon, *ST3970, **S**, RLB.

Ceratophyllum demersum **Rigid Hornwort** In fenced pond south of Home Farm, Tyntesfield National Trust, ST5071, **S**, PM.

Ceratophyllum submersum **Soft Hornwort** In good quantity in the pool where first found, fruiting, in 1976, Kenn, ST4168, **S**, RSC (see BB 1976). Common in a ditch on Puxton Moor, ST4163, **S**, JPM. Pool by Island Hide, Westhay Moor, ST4544, **S**, HJC & Jim Crouch. The vegetative character which HJC refers to - leaves forked 3 times - was first pointed out by Mrs C. I. Sandwith in our *Proceedings* in 1927. White (1912) had remarked that without fruit, the two species could not be reliably separated.

Helleborus foetidus **Stinking Hellebore** North Road Leigh Woods, ST5673, **S**, DB; confirmed by CML and MARK in early January 2010 as scattered plants along the very edge of Nightingale Valley, where it is relatively new. Still in Burwalls Wood, ST5672, **S**, JPM. Charlton Field, ST6365, **S**, MW. Three plants in the only square shown in *FBR* for 10km around.

Helleborus viridis **Green Hellebore** A single plant near a field gate, just north of Cadbury Camp Lane West, near Clevedon. Tickenham Ridge, ST4372, **S**, EN. See BB 2006 for another site in ST 47; *FBR* has none. Still at Pilton Wood, ST5841and in nearby Flat Wood, ST 5842, both **S**, RSC and as recorded in the *Somerset Atlas*.

Ranunculus lingua **Greater Spearwort** Kenn, ST4168, **S**, RSC. White had written of the site "very splendid in swamps near the railway between Yatton and Clevedon". As RSC points out, the plant has outlived the railway.

Ranunculus flammula **Lesser Spearwort** Moat House Farm, ST4873, **S**, PM & MW.

Ranunculus ophioglossifolius **Adder's-tongue Spearwort** About 20 plants flowering at Inglestone Common, ST7588, **G**, in 2009, Hazel Wilmott, per JPM.

Ranunculus aquatilis **Water crowfoot** Pond, Westerleigh, ST7078, **G**, RLB. On the muddy margins of a recently cleaned out pond, Hoar Gout, ST5380, **G**, JPM. In the same habitat in 2002 but not persistent, above Paradise Bottom, *Leigh Woods, ST5474, **S**, CML.

Thalictrum flavum **Common Meadow-rue** Orchard Pools, Severn Beach, *ST5483, **G**, JPM.

Glaucium flavum **Yellow Horned-poppy** 12 plants at Brean Down this year (late 2008, 40-50, see BB 2008), ST2958, **S**, RSC. One plant at top of beach (2008, 1), Berrow Dunes, ST2951, **S**, MW. At the BNS Botanical Section members evening in December 2009, Margaret made a presentation of her observations of the plant this year at Sand Bay, ST3364 and ST3365, **S**, and showed the survival of individual plants against an environment of shifting sands is precarious. As she later described it, "The *Glaucium* situation at the end of 2009 was 2 plants left on Sand Bay and one on Berrow beach (of those that I was observing). After the high tide at the end of March 2010 the count is 0!"

Fumaria officinalis **Common Fumitory**, Weston-super-Mare, ST3358, **S**, RLB.

Betula pubescens **Downy Birch** Crown Hill, Winford, ST5363, **S**, MW. White did not systematically separate the two birches and recorders and taxonomists still find them difficult. There are relatively few records of this species in *FBR*, and none in this 10 km square, though it is shown there in the BSBI Atlas. The situation for ST57 is similar; Garlick had a specimen from Leigh Woods confirmed by E. F. Warburg in 1956 and it is easily found at the river end of the northern valleys and in quarries 1 and 2, ST5475, ST5574.

Chenopodium rubrum **Red Goosefoot** Tyntesfield, ST7071, **S**, RLB.

Chenopodium polyspermum **Many-seeded Goosefoot** Moat House Farm, ST4873, **S**, HJC, PM & MW.

Atriplex prostrata **Spear-leaved Orache** Moat House Farm, ST4873, **S**, PM & MW.

Atriplex littoralis **Grass-leaved Orache** Berrow Dunes, ST2951, **S**, HJC & RSC. A large plant at top of beach, on first low dune. Reported by RSC in BB 2007 by the River Brue at Burnham, a few km south. In a flower bed in the housing estate on the former site of Ham Green Hospital ST5375, **S**, SRPG in 2008.

Stellaria palustris **Marsh Stitchwort** Well scattered across a wet field, Chilton Moor, ST3743, **S**, RSC.

Sagina nodosa **Knotted Pearlwort** Still at Dolebury Warren, as reported in *FBR*, in small quantity on the ramparts, ST4559, **S**, JPM.

Sagina maritima **Sea Pearlwort** Several rosettes on sea wall at Burnham-on-Sea, ST3048, **S**, RSC.

Spergula arvensis **Corn Spurrey** Six plants in corner of arable field, Moat House Farm, ST4873, **S**, PM & MW.

Spergularia marina **Lesser Sea-spurrey** For about 1 km, occasional to locally frequent in the central reservation of the A4 near Keynsham, *ST6469 and ST6569, **S**, JPM.

Silene uniflora **Sea Campion** On an old mining slag heap, in a woodland clearing, East Harptree Woods, ST5554, **S**, RSC. The *Somerset Atlas* has a 1991 record and describes it as sporadic there.

Persicaria amphibia **Amphibious Bistort** Horton, ST7784, **G**, RLB

Limonium binervosum aggregate **Rock Sea-lavender** A single plant on stabilised dunes, Berrow, ST2952, **S**, RSC. Recorded over many years but last seen there by RSC in 2001. FBR gives sites at Portishead (2002!), Sand Point (2003!), Swallow Cliff and Steep Holm in the aggregate name of *L. binervosum*. In 2006 SRPG found it abundant on the south-facing cliffs there and Simon Leach determined it as *L. procerum* (C. E. Salmon) Ingr. ssp. *procerum*. Given the restricted distributions of the other segregates, this is likely to be the name for all of our Rock Sea-lavenders.

Hypericum pulchrum **Slender St John's-wort** Walton Moor, ST4373, **S**, RSC.

Malva moschata **Musk-mallow** A white-flowered plant beside B3129 at Failand, ST5171, **S**, PM.

Malva neglecta **Dwarf Mallow** A small amount near the Barracks, Steep Holm, ST2260, **S**, JPM.

Tilia platyphyllos **Large-leaved Lime** One in a hedgerow, Cleaves Wood, *ST7657, **S**, JPM. *FBR* mentions its occasional occurrence as planted specimens without indicating the sites.

Althaea officinalis **Marsh-mallow** Four plants at Sand Bay, ST3365, **S**, RSC. Discovered there, apparently new to the site, by SRPG in 2005.

Viola arvensis **Field Pansy** Moat House Farm, ST4873, **S**, PM & MW.

Arabidopsis thaliana **Thale Cress** Dundry Hill, ST5667, **S**; River Avon, Bath, ST7462, **S**, both RLB and not adjacent to squares recorded in FBR.

Rorippa nasturtium-aquaticum **Watercress** Pond near Westerleigh, *ST7078, **G**, RLB.

Arabis scabra **Bristol Rock-cress** It has been known to LH for some time on and below the ridge between Quarry 1 and Quarry 2, Leigh Woods, ST5574, **S**. I was taken there to see it in early January 2010 in hazardous conditions and believe I must have overlooked it here, as apparently had all previous surveyors. There is an unconfirmed record for Quarry 3 (as a grid reference) in Margaret Pring's Bristol Ph. D. thesis (1958). Libby adds that a few plants have occurred on the upper part of St. Vincent's Rocks between the Observatory and the Suspension Bridge, ST5673, **G**, as indicated by a 1972 survey. White, who we suspect was not a fearless climber (at page 592 of his *Flora* he mentions a "plucky lady" who climbed the southern cliffs without shoes), had "found nothing conclusive to show that this plant ever grew on St. Vincent's Rocks as limited to the Observatory Hill or limestone south of the Great Fault" (*Flora* p. 70). Libby also tells me that she believes the species is no longer to be found at Penpole Point, ST5377, **G**, having observed as few as two in recent years. It had been known there since at least 1878 and in 1884 White noted 15 plants on the SW face of Penpole Point and about 100 on the NE side by the quarry. In 1978 I counted about 125 rosettes in the quarry. 146 individuals were reported in four sub-populations by I. Taylor in 1990 (*Red Data Book*, 1999).

Cardamine impatiens **Narrow-leaved Bitter-cress** On a track-side at the margin of Leigh Woods in Abbots Leigh parish, south-east of the forest entrance road, ST5573, **S**, NH. Although well-known and sometimes abundant after disturbance in the Long Ashton portion of the woods, I do not recall seeing it north of the parish wall.

Cochlearia danica **Danish Scurvy-grass** Weston-super-Mare, ST3359 and ST3461, **S**, RLB; Farmborough ST6560, **S**, HJC, and ST6660, **S**, HJC & PW; Marksbury, ST6662, **S**, HJC & PW. Still spreading.

Erophila majuscula **Hairy Whitlowgrass** A good colony on bare ground near Stocker Hole at Stoke St. Michael, ST6647, **S**, RSC. A second confirmed record for the southern part of our region after a single plant found last year, also by RSC (see BB 2008).

Thlaspi arvense **Field Pennycress** Wickwar, ST7188, **G**, RLB.

Lepidium draba **Hoary Cress** By A38 at Rooks Bridge, ST3652, **S**, MW det. HJC.

Primula x *polyantha (P. veris* x *vulgaris)* **False Oxlip** A few with the parents, in a field north of Prior's Wood, Portbury, ST4975, **S**, EN. Two on bank beside footpath through field, one pale, one deep yellow, Leighdown Farm, Winford, ST5463, **S**, MW. Single plants at Cleaves Wood, ST7557, **S** and Blagdon Lake, ST5159, **S**, both JPM. It is always a delight to see and little wonder that Victorian naturalists were puzzled by it.

Hottonia palustris **Water-violet** Puxton Moor, ST4162, S, JPM. Recorded in ST 4262 in *FBR* but the present record is unquestionably distant.

Lysimachia vulgaris **Yellow Loosestrife** Tormarton, *ST7777, **G**, RLB.

Anagallis tenella **Bog Pimpernel** Still at Walton-in-Gordano, ST4272, **S**, reported by both EN and RSC, but in different places.

Potentilla erecta **Tormentil** Barrow Lane meadows, ST5366, **S**, BNS field meeting led by MW.

Rosa rubiginosa **Sweet-briar** Hedgerow in a lane in the housing estate on the former site of Ham Green Hospital ST5375, **S**, SRPG in 2008. A large bush with many fruits on verge of A4 near Newton St Loe, ST7065, **S**, RSC. One or more on steep south-facing slopes of Dolebury Warren fort, ST4558, **S**, JPM. Presumably only native in the last site (see also BB 2005 and 2007).

Lotus glaber **Narrow-leaved Bird's-foot-trefoil** Several plants at Severn Beach, near gate on to beach, ST5384, **G**, NH & LH. Still at Hengrove, ST5968, **S**, where mapped in *FBR*, RLB.

Ornithopus perpusillus **Bird's-foot** Occurring in large quantity in acid turf at the AXA headquarters near Bristol Parkway Station, ST6279, **G**, RJH. Associated with the following plants not recorded there in *FBR*: *Aira caryophyllea*, **Silver Hair-grass**; Aira praecox, **Early Hair-grass**; *Cerastium semidecandrum,* **Little Mouse-ear**; Erigeron acer, **Blue Fleabane**; *Erodium cicutarium*, **Common Stork's-bill**; *Geranium columbinum*, **Long-stalked Crane's-bill**; and *Rumex acetosella*, **Sheep's Sorrel**.

Vicia lathyroides **Spring Vetch** Brean Down, ST2958, **S**, RSC, who reports it still in good quantity.

Lathyrus sylvestris **Narrow-leaved Everlasting-pea** Hinton Charterhouse Pit, ST7757, **S**, JPM.

Medicago polymorpha **Toothed Medick** In acid turf at the AXA headquarters near Bristol Parkway Station, ST6279, **G**, RJH. Associated with various calcifuges (see *Ornithopus perpusillus* above). *FBR* has only one record, a putative native at Weston-super-Mare whereas White's *Flora* has it (under *M. denticulata*) as a recent but somewhat persistent colonist, especially from the Cumberland Basin and beside the Avon through the Gorge, where it survived from the 1880's to at least 1945.

Medicago arabica **Spotted Medick** St George's Flower Bank, ST5075, **S**, PM at BNS field meeting. On mown bank on side of B3130, Winford, ST5365, **S**, MW.

Trifolium ornithopodioides **Bird's-foot Clover** Severn Beach, ST5383, **G**, JPM, locally abundant in short sparse turf near the outfall pipes in the old tip. *FBR* has just three records and White wrote "unless specially hunted for it will rarely be perceived". JPM reported it "in flower so quite easy to spot".

Trifolium fragiferum **Strawberry Clover** Severn Beach, locally abundant in grassland behind sea wall, ST5384, **G**, NH & LH. Field east of Winford, ST5464 and ST5465, **S**, MW.

Trifolium scabrum **Rough Clover** Severn Beach, ST5484, **G**, in small quantity on fine ballast by the station, JPM.

Trifolium squamosum **Sea Clover** Particularly abundant along the seawall south of Clevedon this year, ST3869, **S**, or thereabouts, RJH.

Myriophyllum verticillatum **Whorled Water-milfoil** Weston Moor, ST4473, **S**; Clapton Moor in 2008, ST4573, both PM, confirming sites mapped in *FBR*.

Myriophyllum spicatum **Spiked Water-milfoil** 'Biddle Street' west of Congresbury, ST4164 **S**, JPM.

Epilobium palustre **Marsh Willowherb** Beacon Hill Wood, ST6345, **S**; Westhay Moor, ST4543, **S**, both RSC.

Epilobium tetragonum **Square-stalked Willowherb** Crown Hill, Winford, ST5363, **S**, MW. Not otherwise within several km according to the maps in *FBR*.

Epilobium roseum **Pale Willowherb** Severn Beach, *ST5383, JPM, a single plant on the sea wall.

Viscum album **Mistletoe** Tyntesfield, ST5071, **S**, RLB; Dundry Hill, ST5665, **S**, MW; in grounds of council salt depot, Clutton, ST6158, **S**, HJC; single plant on hawthorn near top of east-facing side of Cross Plain, ST4155, **S**, MW; many clumps in two apple trees, Mells, ST7248, **S**, I. P. Green & P. R. Green, per HJC.

Euphorbia serrulata **Upright Spurge** Still in churchyard and nearby at roadside, Upper Cam, ST7599, **G**, L. P. Alder per CK & MARK, where previously reported by them in BB 1996.

Euphorbia exigua **Dwarf Spurge** Dyrham, ST7574, **G**, RLB. Reported from adjacent square ST7474 in BB 2007. Two plants 100m apart at edge of wheat field, south-west of long barrow, Wellow, ST7357, **S**, CVWG per HJC.

Rhamnus cathartica **Purging Buckthorn** Eastwood Farm, Broom Hill, ST6371, **S**, RLB.

Linum bienne **Pale Flax** Middle Ground, Weston-in-Gordano, ST4474, **S**, EN. Persistent in square reported in *FBR*. CK & MARK report that the patch on the Zoo banks, Clifton Down, ST5674 extends for 14 metres and the flowers close by 5pm; which may to some degree explain its infrequent notice.

Hydrocotyle vulgaris **Marsh Pennywort** Beacon Hill, ST6446, **S**, RSC.

Smyrnium olusatrum **Alexanders** A small patch by footpath by railway, Little Stoke, ST6179, **G**, CK & MARK.

Sium latifolium **Greater Water-parsnip** Clapton Moor, ST4573, **S**. PM reports that the original introduction site has virtually failed due to competition and cattle access. 25 plants noted in bank of rhyne and 19 growing well in second introduction site.

Crithmum maritimum **Rock Samphire** Berrow Dunes, a very large clump, ST2951, **S**, MW. Not shown there in the *Somerset Atlas*.

Foeniculum vulgare **Fennel** Hanham Court, ST6470, **G**, RLB.

Bupleurum tenuissimum **Slender Hare's-ear** Many hundreds of plants along the top of the bank on the north side of Littleton Pill and a few on south side, ST5891, **G**, NH.

Calystegia soldanella **Sea Bindweed** Berrow Dunes, ST2951, **S**, RGC, per HJC. A large patch 500m away from the site in the same square reported in BB 2008.

Lithospermum officinale **Common Gromwell** Below Conygre Wood, Old London Road, Wotton-under-Edge and in Westridge Wood, both ST7594, **G**, RSC; two large clumps on open ground at the edge of the path leading from Clevedon Court to the gamekeeper's cottage; Norton's Wood, Clevedon, ST4272, **S**, EN; Walton Common, ST4274, **S**, EN, several plants on the northern end of the common, but in a different place from where seen previously; Woolverton, ST7954, **S**, RSC; Cleaves Wood, ST7657, **S**, RSC.

Lithospermum purpureocaeruleum **Purple Gromwell** Hutton, just in ST3458, **S**, RSC who has known it there since 1987. Included in FBR in adjacent squares ST 3558 and ST3658. St Brody's *Flora of Weston* (1856) records it in a coppice wood near Hutton.

Myosotis scorpioides **Water Forget-me-not** Horton, ST7784, **G**, RLB. Around pond north-east of Winford, ST5465, **S**, MW.

Myosotis secunda **Creeping Forget-me-not** A single plant, south east of the pond, Beacon Hill, ST6446, **S**, RSC. Included in this tetrad in the *Somerset Atlas*.

Verbena officinalis **Vervain** Clevedon, ST3970, **S**, RLB.

Lamium hybridum **Cut-leaved Dead-nettle** Arable field margin by Hinton Charterhouse pit, ST7757, **S**, JPM.

Galeopsis tetrahit **Common Hemp-nettle** Prior's Wood, ST4873, ST4874 and ST4974, **S**, EN. Not recorded here in FBR. Also near Moat House Farm in ST4873, **S**, PM & MW.

Marrubium vulgare **White Horehound** On the south side of Brean Down, above the Bird Gardens, ST2958, **S**, RSC. Several clumps on a sandy cliff, associated with a rabbit warren and a different site from that observed by RSC between 1989 and 1998. White knew it on Brean Down "in plenty" but it is much reduced in localities and quantity since his day. A few plants of *Anchusa arvensis* **Bugloss** nearby, RSC.

Scutellaria minor **Lesser Skullcap** Several plants in a boggy field below Blackdown, ST4756, **S**, RSC. Recorded in this tetrad in the *Somerset Atlas*.

Thymus pulegioides **Large Thyme** On the Stony Littleton Long Barrow, ST7357, **S**, CVWG per HJC. Scattered along quarry cliff, Binegar ST6249, **S**, RSC.

Callitriche brutia Petagna var. *brutia* **Pedunculate Water-starwort** Near Rowberrow Farm, Priddy, ST5252, ***S**, HJC & FR. A small amount on mud at edge of more northerly of two small ponds north of B3135. **First record for v.c. 6** of a plant previously known as *pedunculata* although perhaps the records for *C. hamulata* (two in each division) in *FBR* could have been undifferentiated sub-specific records covering what are now treated as varieties of *C. brutia*.

Callitriche stagnalis **Common Water-starwort** In plenty in dried up pond, Sutton Wick, ST5758, **S**, MW.

Plantago coronopus **Buck's-horn Plantain** Beside A37, south of Clutton outside council salt depot, *ST6158, **S**, HJC.

Chaenorhinum minus **Small Toadflax** Dyrham, ST7574, **G**, RLB. Field gateway, Dundry Lane, Winford, ST5465, **S**, MW.

Kickxia spuria **Round-leaved Fluellen** Unsown arable land, Dyrham, ST7574, **G**, RLB.

Veronica catenata **Pink Water-speedwell** Meadows by Barrow Lane, north of Winford, ST5366, **S**, BNS field meeting led by MW.

Lathraea squamaria **Toothwort** EN has recorded its frequency over the past four years in two woodlands. The counts are listed latest first. In Prior's Wood, Portbury, ST4874 and ST4974, **S**, 122, 71, 111 and 89; in Weston Big Wood, ST4574, **S**, 200, 100, 40, 120.

Orobanche hederae **Ivy Broomrape** St George's Flower Bank, ST5075, **S**, PM and BNS field meeting. Also *Orobanche minor* **Common Broomrape**.

Orobanche minor var. compositarum Pugsley **Common Broomrape** Berrow Dunes, ST2951 and ST2952, **S**, SRPG. 13 spikes identified in three places. The variety differs from var. *minor* in having narrower corollas more angled upwards than outwards on the stem and is substantially confined to hosts in the composite family. Reportedly more frequent in East Anglia than elsewhere in Britain but it has, for example, been recorded on *Crepis capillaris* in Wiltshire and on *Hypochaeris radicata* on the Berkshire chalk. It was refound after a deliberate search at a place where it was last certainly recorded in 1923 (SRPG newsletter for 2009, pages 11-12).

Utricularia vulgaris **Greater Bladderwort** Weston Moor, a second recorded area in ST4473 with 59 flowering spikes, **S**, HJC & PM, conf. FR. Growing with dense *Potamogeton trichoides* **Hairlike Pondweed**, this species a little distance from the two ditches mentioned in BB 2008.

Campanula patula **Spreading Bellflower** Still at East Harptree Combe, ST5655, **S**, JPM, who noted four plants on banks near old ramparts and one about 50 m away. In 2000, SRPG could only find two plants at its only site in *FBR*.

Campanula rotundifolia **Harebell** Siston Common, ST6674, **G**, NH, very tall plants over 1m growing up through brambles.

Galium odoratum **Woodruff** Bitham's Wood, in the small part in ST5564, **S**, MW.

Valerianella locusta **Common Cornsalad** A single plant growing out of a crack in a wall in Battery Road, Portishead, ST4676, **S**, EN.

Valeriana officinalis **Common Valerian** Bath, ST7463, **S**, RLB.

Valeriana dioica **Marsh Valerian** Occasional to frequent in rich fen-meadow vegetation, north shore of Blagdon lake, ST5159, **S**, JPM.

Dipsacus pilosus **Small Teasel** Banks of the River Avon at Hanham Court, ST6470, **G**, and Bath, ST7464, **S**, both RLB, two squares not in *FBR*.

Cirsium eriophorum **Woolly Thistle** Dyrham, ST7474, **G**, RLB. Several plants on Walton Common, ST4373, **S**, EN.

Picris hieracioides **Hawkweed Oxtongue** Weston-super-Mare, ST3359, **S**, RLB.

Lactuca serriola **Prickly Lettuce** Engine House, Crown Hill, Winford, ST5363, **S**, MW.

Lactuca virosa **Great Lettuce** Moat House Farm, ST4873, **S**, PM & MW.

Gnaphalium uliginosum **Marsh Cudweed** Moat House Farm, ST4873, **S**, PM & MW.

Chrysanthemum segetum **Corn Marigold** A large straggly plant in grass by track outside holiday houses below Brean Down, ST2958, **S**, MW.

Alisma plantago-aquatica **Water-plantain** Westerleigh, ST7078, **G**, RLB; Moat House Farm, ST4873, **S**, PM & MW.

Potamogeton natans **Broad-leaved Pondweed** Westerleigh, ST7078, **G**, RLB; ponds to the west and south-west of Kingdown, *ST5263 and ST5264, **S**, MW.

Potamogeton pusillus **Lesser Pondweed** 'Biddle Street' west of Congresbury, ST4164, **S**, JPM.

Potamogeton berchtoldii **Small Pondweed** In pond in corner of field, Moat House Farm, ST4873, **S**, HJC, PM & MW, conf. FR.

Potamogeton trichoides **Hairlike Pondweed** Hoar Gout, *ST5380, **G**; Puxton Moor, ST4163, **S**, both JPM.

Groenlandia densa **Opposite-leaved Pondweed** Dyrham Park, ST7476, **G**, JPM. Around edge of pond in corner of field, Moat House Farm, ST4873, **S**, PM & MW.

Zannichellia palustris **Horned Pondweed** Inglestone Common, ST7588, **G**, JPM.

Juncus foliosus **Leafy Rush** Three plants beside the *Cyperus fuscus* ditch, Walton Moor, ST4372, **S**, HJC & FR. There is one locality in *FBR* and two in BB subsequently.

Juncus bufonius **Toad Rush** Barrow Lane meadows, ST5366, **S**, BNS field meeting led by MW.

Juncus subnodulosus **Blunt-flowered Rush** Locally abundant in rich fen-meadow vegetation, north shore of Blagdon lake, ST5159, **S**, JPM.

Luzula multiflora **Heath Wood-rush** St George's Flower Bank ST5075, **S**, PM and BNS field meeting.

Eriophorum latifolium **Broad-leaved Cottongrass** At the well-known site at Max Bog ST4057, **S**, where it was discovered by Miss Roper in 1919, RSC this year noted twelve heads and three in the adjoining meadow 100m away. It was presumably describing a hunt for this species, that the young Noel Sandwith wrote to H. Stuart Thomson in 1919, "we failed hopelessly at Max Bog; [we] could not even find the bog."

Eleocharis palustris **Common Spike-rush** Tyntesfield National Trust, in fenced pond south of Home Farm, ST5071, **S**, PM. Beside pond above Paradise Bottom, Leigh Woods, ST 4574, **S**, 2002 and occasionally since, *new to the Avon Gorge, CML.

Schoenoplectus tabernaemontani **Grey Club-rush** Hoar Gout ST5380, **G**; Orchard Pools, Severn beach, ST5483, **G**; Puxton Moor, ST4162, **S**, all in small quantity, JPM. Considered under-recorded in *FBR*.

Isolepis cernua **Slender Club-rush** Six small plants near the site of *Cyperus fuscus* on Walton Moor, ST4372, **S**, HJC & FR. Persistent at its only site in *FBR*, where last recorded in BB 2003.

Eleogiton fluitans **Floating Club-rush** Clapton Moor, ST4573, **S**, PM, who reported that there was more than she had previously seen: a rhyne was almost covered with it for about 100m.

Cyperus fuscus **Brown Galingale** HJC & PM counted eight flowering plants on a poached area at its well-known Walton Moor site, ST4372, **S**. Nine were reported in BB 2007. White wrote of this rare plant, discovered here in 1900, "the marvel is that this plant, an annual, continues to exist at all".

Schoenus nigricans **Black Bog-rush** Still at Yanal Bog, ST4260, **S**, JPM, who adds it occurs in a small area where it is very locally abundant.

Carex vesicaria **Bladder-sedge** One clump at edge of pond, Faulkland, *ST7354, **S**, HJC, conf. FR.

Carex strigosa **Thin-spiked Wood-sedge** Several clumps at Harptree Combe, East Harptree, ST5655, **S**, RSC.

Carex pallescens **Pale Sedge** Leigh Woods, on track-side at boundary of National Trust holding, ST5573, **S**, NH. I have notes of it in three places in ST5574, 1987-2002. Of sporadic occurrence in the ancient Leigh Woods and normally reported from pathways or open glades, probably always following disturbance. In Oliver Rackham's *Ancient Woodland* (2003) it is listed as a coppicing plant from the seed-bank in one of his eight example sites; each wood has (or had) its own characteristic suite of species. White (1912) specifically mentions *Hypericum hirsutum*, **Hairy St John's-wort** becoming plentiful in Leigh Woods after cutting of the underwood. On the Mendips (p. 14) he recalled after coppicing "wondrously gay drifts of bluebells, primroses, red campions, yellow archangel, starry stitchworts and lilac spotted orchids in profusion", but added that in Cheddar Wood, "no woodman has cut a faggot within the memory of man, [so] the flowers lie dormant and no gleam of colour breaks the...gloom".

Carex pilulifera **Pill Sedge** Park Copse, Compton Dando, ST6364, **S**, NH, adding to his nearby record for ST6363 in BB2008. Several clumps on NE-facing slope of Highbury Hill, Clutton, ST6358, **S**, HJC.

Puccinella distans **Reflexed Saltmarsh-grass** On pavement by wall, Stoke Hill, ST5675, **G**, PH. For about 1 km, occasional to locally frequent in the central reservation of the A4 near Keynsham, *ST6469 and ST6569, **S**, JPM.

Poa infirma **Early Meadow-grass** RSC reports that the guttering sites mentioned at Burnham-on-Sea, ST3049, **S**, in BB 2008 were cleaned out. However he found a few plants on a pavement and elsewhere.

Glyceria maxima **Reed Sweet-grass** Tyntesfield National Trust, ST5071, **S**, PM, in small pond in garden behind estate office.

Holcus mollis **Creeping Soft-grass** Engine House, Crown Hill, Winford ST5363, **S**, MW.

Aira praecox **Early Hair-grass** Dolebury Warren, ST4458, **S**, BNS field meeting.

Bromus commutatus **Meadow Brome** In a field north of Overscourt Wood, Siston, ST687748, **G**, NH.

Molinia caerulea **Purple Moor-grass** On the floor of Quarry 2 under Leigh Woods, ST5574, **S**, NH & LH. Now a tussock, but found here several years ago as a small plant. An unusual adventive occurrence here, perhaps introduced on botanist's boots; not otherwise currently known in ST57. It seems to have been last noted on the Downs opposite (Clifton Down) by the Sandwiths in 1920, according to an annotation in their copy of White's *Flora*. Part of a lost treasure of botanical riches (notably *Pyrola minor*, **Common Wintergreen**) once occurring in a damp wood beside Sandy Lane, Abbots Leigh, an area which I suspect has not been adequately searched in a century.

Gagea lutea **Yellow Star-of-Bethlehem** RSC reports just three flowering plants at the Stoke St Michael locality which he now places just in ST6647, **S**. He reported 31 in 2007 whereas Ian Green and SRPG found "lots of the plants flowering nicely" in 2000; from 1995 to 1997 there was "a magnificent carpet of yellow blooms" according to the *Somerset Atlas*. The *Somerset Atlas* reported a site at Lily Combe, Litton (was this the eponymous Lily?) as having been destroyed in 1989 by "in-filling of the valley and levelling of the ground". HJC tells me that in 2009 Mark Jannink refound it in five patches in rocky woodland remaining around the perimeter of the combe, ST5853, **S**, and adds that when she visited the spot there were hundreds of plants in two of the patches, but the clumps were compact and small. There was just one flower in one of the smallest patches.

Convallaria majalis **Lily-of-the-Valley** Bishop's Hill Wood, Wickwar, ST7387, **G**, JPM. Recorded at the south side of this wood by F. Samson in White's *Flora* and not noticed in *FBR*. The current record has a "good patch" but is more in the middle of the wood.

Paris quadrifolia **Herb Paris** Weston Big Wood, ST4575 and ST1574, **S**, EN, who after further searching in 2008 and 2009 estimated a stable population of between 200 and 250 stems in five places with another seen in 2001 not relocated.

Ornithogalum pyrenaicum **Spiked Star-of-Bethlehem** On the basis of systematic sampling, JPM estimated some 50,000 spikes in Cleeve Wood, Hanham, ST6570, **G**.

Epipactis violacea **Violet Helleborine** A plant lacking chlorophyll and therefore having the colour throughout of a tropical bromeliad, Lower Woods, ST7487, **G**, Brian Lancastle.

Epipactis leptochila **Narrow-lipped Helleborine** A single flower spike found in at the only site in *FBR*, Clarken Combe, ST5471, **S**, RSC.

Neottia nidus-avis **Birds-nest Orchid** Three plants beside a public footpath linking the B3128 with Cadbury Camp Lane, ST4772, **S**, EN conf. PM, a new site. 12 flower spikes, Hunstrete, ST6462, **S**, RGM, (2 in 2008). Increasing at Ammerdown Park, ST7052, **S**, RSC: 6 in 2004; 13 in 2006; 21 in 2007; 42 in 2008 and 54 in 2009.

Listera ovata **Common Twayblade** In the small part of Bitham's Wood, ST5564, **S**, MW. Not shown in FBR for ST5664, which includes the greater part of the wood.

Spiranthes spiralis **Autumn Lady's-tresses** Tyntesfield, ST5071, **S**, RLB. Hundreds this year despite scaffolding.

Platanthera bifolia **Lesser Butterfly-orchid** Ashcott Heath, ST4439, **S**, where it had a very good year according to RSC. "Many spikes" were noted there in 2008 by SRPG.

Anacamptis pyramidalis **Pyramidal Orchid** Continuing to spread as these five records indicate. *FBR* had 69 sites. Dyrham, ST7475, **G**, RLB, six plants. St George's Flower Bank, ST5075, **S**, BNS field meeting per PM. Five plants just south of sea wall, Portbury Wharf, ST4877, **S**, EN. Hengrove, ST5968, **S**, RLB. 24 plants on grassy bank near sluice, West Huntspill, ST2945, **S**, RSC.

Dactylorhiza x transiens (Druce) Soo **Heath Spotted-orchid x Common Spotted-orchid** St George's Flower Bank, ST5075, **S**, PM, BNS field meeting; again (see BB 2005) near Herons Green, Chew Valley Lake, ST5559, **S**, RGM, at least four spikes.

Dactylorhiza x grandis **Common Spotted-orchid x Southern Marsh-orchid** Chew Valley Lake, ST5560, **S**, RGM; Blackmoor, Charterhouse, ST5055, **S**, HJC, a large clump of 12 flowering spikes, near entrance from field.

Dactylorhiza maculata **Heath Spotted-orchid** Barrow Lane meadows, ST5366, **S**, BNS field meeting led by MW. The pale var. *leucantha*, is persistent near Herons Green, Chew Valley Lake, ST5559, **S**, RGM - one seen in 2009, two in 2006.

Dactylorhiza praetermissa **Southern Marsh-orchid** St George's Flower Bank, ST5075, **S**, PM, BNS field meeting. In a clearing at the eastern end of Norton's Wood, Clevedon overlooking the M5 motorway, ST4372, **S**, EN, who adds, "not a typical habitat for the plant: in tall grass on limestone but with unspotted leaves and the labellum of typical *praetermissa*, so not *D. fuchsii* **Common Spotted orchid**, as might have been expected from the habitat."

Orchis morio **Green-winged Orchid** Blagdon Lake, ST5160 (new to FBR) and still in ST5060, **S**, RSC, who reports a good number in two meadows NE side of lake and 50 spikes in grass on W side.

Himantoglossum hircinum **Lizard Orchid** 38 rosettes in February 2009 at the A432 **G**, site, ST6678, mentioned in BB 2006 and 2007, Brian Laney, per CK & MARK.

Ophrys apifera **Bee Orchid** St George's Flower Bank, ST5075, **S**, BNS field meeting per PM and 22 in ST5175 where one reported in BB 2007, EN. RLB reports 26 spikes of the var. *trollii at* Dyrham, ST7475, **G** and RGM confirms the persistence of var. *friburgensis* at Ubley Warren, ST5055, **S**, two spikes.

Ophrys insectifera **Fly Orchid** A single plant with flowers with a yellow edge to the rather rounded labellum and no notch at the tip was photographed by RGM amongst a known population by the towpath under Leigh Woods, ST5673, **S**. The current consensus is that it is neither the var. *luteomarginata* (which requires a normally shaped labellum) nor a backcross to the hybrid with *O. apifera* (as other features are normal).

ALIENS (neophytes)

Pteris nipponica Shieh **Table Fern** Bath, ST7564, ***S**, HJC & FR. Five young plants in basement between 34 and 35 St James' Parade. **New to Somerset**.

Pteris umbrosa R. Br. **Shady Brake-fern** Bath, ST7465, **S**, CK & MARK det. FR. One plant in basement of 26 Rivers Street. **New to Somerset**.

Cyrtomium fortunei J. Sm. **Fortune's Holly-fern** About a hundred well established plants in Summerhouse Plantation, Ashton Park, ST5572, ***S**, RLB det. HJC conf. FR. One tiny plant in basement between 34 and 35 St James' Parade, Bath, ST7564, **S**, HJC & FR. RLB's find predates the Bath record but the determination was made subsequently. **First and second records for Somerset**.

Polystichum tsus-simense (Hook.) J. Sm. **Korean Rock-fern** Bath, ST7465, ***S**, HJC & FR. One plant in basement of 26 Rivers Street. **New to Somerset**.

Tsuga heterophylla **Western Hemlock-spruce** Planted in the 1950s in the northern part of Leigh Woods and now considered to be regenerating in Paradise Bottom, ST5474, **S**, JPM.

Chamaecyparis lawsoniana **Lawson's Cypress** Self-sown in Paradise Bottom, ST5474, **S**, JPM.

Nigella damascena **Love-in-a-mist** Weston-super-Mare, ST3258, **S**; Norton St Phillip, ST7758, **S**, both RLB.

Papaver somniferum **Opium Poppy** Moat House Farm, Wraxall, ST4873, **S**, HJC, PM & MW.

Chelidonium majus **Greater Celandine** Doynton, ST7174, **G**; Avonmouth, ST5277, **G**; Combe Down, Bath, ST7563, **S**, all RLB.

Meconopsis cambrica **Welsh Poppy** Leigh Woods, on track-side near edge of wood north of parish wall, ST5573, **S**, NH; Combe Down, Bath, ST7563, **S**, RLB; Norton Lane, ST7657, **S**, RLB.

Corydalis cheilanthifolia Hemsl. **Fern-leaved Corydalis** One plant in gutter at edge of road, beside the wall of The Priory, Southstoke, ST7461, **S**, CVWG per HJC.

Cannabis sativa **Hemp** A single plant, The Tumps, near Lansdown Monument, *ST7170, **S**, JPM.

Ficus carica **Fig** On edge of path by River Avon, Bath, ST7464, **S**, RLB.

Quercus rubra **Red Oak** This oak was planted in the northern part of Leigh Woods probably in the 1950s. Adrian Grenfell in his *Review of the Alien and Introduced Plants of the Avon Gorge* in our 1987 Proceedings reported no evident naturalisation. By 2007, Tony Titchen reported in his *Tree Watch* column in our Bulletin for February 2007 that "the trees are producing acorns and many young seedling trees are being produced". JPM also this year reports regeneration with seedlings and young trees at Paradise Bottom, ST5475, **S**.

Chenopodium ficifolium **Fig-leaved Goosefoot** Disturbed ground, The Tumps, near Lansdown Monument, ST7170, **S**, JPM.

Amaranthus retroflexus **Common Amaranth** Common in field margins at SE end of Tait Wood, near Hinton Charterhouse, ST7657, **S**, JPM.

Agrostemma githago **Corncockle** Sheepway, near Portbury, one plant on track edge by rhyne, not far from gate, ST4876, **S**, NH.

Saponaria officinalis **Soapwort** Tyntesfield, ST7071, **S**, RLB; Plenty growing through hedge by B3130, Winford, ST5365, **S**, MW; Norton St Phillip, ST7656, **S**, RLB.

Fallopia japonica **Japanese Knotweed** Westerleigh, ST7078, **G**; Oatfield Farm, ST5066, **S**, both RLB.

Fallopia x bohemica (*F. japonica x sachalinensis*) **A hybrid Knotweed** A large patch on west side of track between Combe Hay and Odd Down, ST7360, **S**, HJC & FR.

Fallopia sachalinensis **Giant Knotweed** Old Down Country Park, ST 6087, **G**, Mathew Pickard, per CK & MARK.

Fallopia baldschuanica **Russian-vine** Hanham Court, ST6470, **G**, RLB.

Alcea rosea **Hollyhock** Avonmouth, ST5177, **G**, RLB.

S. cf. *flava* L. **Yellow Pitcherplant** Still at Westhay Moor, ST4543, **S**, DB. HJC reported in BB 2008 that this obviously planted alien was expected to be removed.

Hesperis matronalis **Dame's-violet** Avonmouth, ST5379, **G**; Dundry Hill, ST5666, **S**, both RLB.

Lunaria annua **Honesty** Hanham Court, ST6470, **G**, RLB.

Arbutus unedo **Strawberry-tree** A mature bush in Burwalls Wood, Leigh Woods, ST5672, **S**, JPM, not far from the garden.

Reseda alba L. **White Mignonette** Bristol Docks, ST5771, **G**, RLB. The last record in the Bristol Region appears to have been on the Bedminster Tip (BB 1977). Otherwise I only have old records to hand: it was collected at Ashton Gate in 1922 by the Sandwiths and found in the same year at Portishead Station yard by Miss Livett, and it is also reported at Avonmouth in Mrs Sandwith's *Adventive Flora*, (published 1932*)*.

Ribes uva-crispa **Gooseberry** Gorse covert between Pucklechurch and Yate, ST7178, **G**, RLB.

Sedum spurium **Caucasian-stonecrop** A patch on a rock face behind the barracks, *Steep Holm, *ST2260, **S**, JPM.

Saxifraga hirsuta **Kidney Saxifrage** Still at Bourton Combe, ST 5068, **S**, JPM, four or five flowering stems and leaves spread over several metres. When first reported, by P. J. M. Nethercott in BB 1992, it was already well established and thought likely to become permanent.

Tellima grandiflora **Fringecups** Established on roadside verges near housing, Curtis Mill, Upper Kilcott, ST7988, **G**, CK & MARK. Five records in *FBR* and one since in BB 2007.

Duchesnea indica **Yellow-flowered Strawberry** On the former railway line at Lyncombe Vale, Bath, ST7563, **S**, RJH. Only five records in *FBR*.

Alchemilla mollis **Garden Lady's-mantle** Ubley, ST5357, **S**, RLB.

Malus domestica **Apple** Westerleigh, ST7077, **G**, RLB.

Pyrus communis **Pear** Westerleigh**,** ST7077, **G**, RLB.

Sorbus intermedia **Swedish Whitebeam** Cheddar Gorge, ST4754, **S**, LH. A single tree, on the south side of the gorge, 5m tall.

Galega officinalis **Goat's-rue** Hengrove, ST5968, **S**, RLB.

Dorycnium hirsutum **Canary Clover** Abbey Wood Station, Filton, ST6078, **G**, DB. One mature bush and one young plant, increasing from the one mature bush the season before. Also noted tentatively here as not flowering by JPM in 2007. First reported in the region at Weston-super-Mare in BB 2005.

Lathyrus latifolius **Broad-leaved Everlasting-pea** Hengrove, ST5968, **S**, RLB; St George's Flower Bank, ST5075, **S**, PM and BNS field meeting.

Vicia faba **Broad Bean** One plant in St Werburgh's Churchyard, ST6074, G, DB. One plant at edge of field, near Moat House Farm between Wraxall and Clapton-in Gordano, ST4873, **S**, HJC, PM & MW.

Trifolium hybridum **Alsike Clover** Near Moat House Farm, ST4873, **S**, PM & MW; plants scattered in crop, in field off Dundry Lane, ST5465, **S**, MW.

Elaeagnus umbellata Thunb. **Spreading Oleaster** Sand Bay, ST3364, **S**, HJC & MW. Two plants on seaward side of fence at top of dunes, south-east of "Danger Sinking Mud" sign. **New to Somerset.**

Oenothera glazioviana **Large-flowered Evening-primrose** By gateway into field, Dundry Lane, ST5465, **S**, MW.

Euphorbia characias **Mediterranean Spurge** Avonmouth Docks, ST5180, **G**; by River Avon, Bath, ST7464, **S**, both RLB.

Parthenocissus quinquefolia **Virginia-creeper** Hanham Court, ST6470, **G**; Hengrove, ST5868, **S**, both RLB.

Parthenocissus inserta **False Virginia-creeper** One plant, Redding Pits, ST5363, **S**, MW.

Rhus typhina **Sumach** In hedge at Doynton, ST7174, **G**, RLB.

Geranium endressii **French Crane's-bill** Bath, ST7366, **S**; in hedge at Abson, ST7074, **G**; Flax Bourton, ST5069, **S**, all RLB.

Impatiens glandulifera **Indian Balsam** Two patches in damp woodland in East Harptree Woods, ST5554, **S**, RSC.

Impatiens parviflora **Small Balsam** Bourton Combe on main path, ST5068, **S**, RLB.

Coriandrum sativum L. **Coriander** Regil, ST5361, **S**, MW. Growing on a heap of earth and rubble at the edge of a field near Walnut Tree Farm. Last recorded in 1979 according to *FBR*, but probably referring to records in BB 1978. I have a specimen dated 1981, from Avonmouth Docks, **G**, where it was pointed out to me by Adrian Grenfell.

Heracleum mantegazzianum **Giant Hogweed** A few plants persisting on waste ground, Stapleton, ST6176, **G**, AGS. Also 50 or more plants allowed to grow on bank of River Frome but protected by high flood defence walls near M32 junction 3 at ST6073, while plants growing in adjacent amenity areas were cleared by local authority at an earlier stage, before flowering.

Nicotiana x sanderae W. Watson (*N. alata x forgetiana*) **A Garden Tobacco** Regil, ST5361, **S**, MW. Three plants growing on a heap of earth and rubble at the edge of a field. Flowers purple.

Solanum tuberosum **Potato** In full flower, on waste heap, Doynton, ST7174, **G**, RLB.

Symphytum orientale **White Comfrey** Flax Bourton, ST5069, **S**, RLB.

Borago officinalis **Borage** *Steep Holm, *ST2260, **S**, JPM.

Trachystemon orientalis **Abraham-Isaac-Jacob** Lower Hazel, Alveston, *ST6287, **G**, CK & MARK. A small patch flowering at the woodland edge.

Verbena bonariensis **Argentinian Vervain** In gutter, Ambrose Road, Clifton, ST5772, **G**, JPM. Tyntesfield, ST7071, **S**; Norton St Phillip, ST7758, **S**, both RLB.

Stachys byzantina **Lamb's-ear** Avonmouth, ST5177, **G**, RLB.

Lamiastrum galeobdolon ssp. *argentatum* **Garden Yellow Archangel** Bath, ST7366, **S**; Tormarton, ST7978, **G**, St Annes, ST6272, **S**, Combe Down, ST7562 and ST7563. **S**, Weston-super-Mare, ST3259 and ST3358, **S**, all RLB.

Forsythia x intermedia Zabel **Forsythia** Flowering on dumped spoil by the roadside, Orchard Pools, Severn Beach, ST5483, **G**; in a hedge, Pilning, ST 5585, both JPM. Not recorded in *FBR* but the authors of the earlier Somerset Atlas (1997) took a broader view and mapped records of plantings and throw-outs in the wild.

Campanula portenschlagiana **Adria bellflower** River Avon, Bath, ST7463 and ST7365, **S**; Dundry Hill, ST5967, **S**; Bishop Sutton, ST5859, **S**; Weston-super-Mare, ST3258, **S**; Ubley, ST5257, **S**, all RLB.

Campanula poscharskyana **Trailing bellflower** Broadmead, ST5973, **G**; Weston-super-Mare, ST3258, **S**, both RLB.

Lobelia erinus **Garden Lobelia** Bath, ST7365, **S**, RLB, in gutter.

Leycesteria formosa **Himalayan Honeysuckle** River Avon Bath, ST7265, **S**; Tyntesfield, ST7071, **S**, both RLB.

Knautia macedonica Griseb. **Crimson Scabious** One big plant on verge at the start of Hollow Marsh Lane, south-east of Hinton Blewett, ST5956, **S**, JPM. According to HJC, there are a few recent records scattered across the country, but none for Somerset. It has red-purple flowers and has been a popular garden plant recently. **New to the Bristol Region.**

Centaurea cyanus **Cornflower** Avonmouth, ST5278, **G**, RLB.

Centaurea montana **Perennial Cornflower** Dundry Hill, ST5966, **S**, RLB.

Pilosella flagellaris (Willd.) P. D. Sell & C. West ssp. *flagellaris* **Spreading or few-headed Mouse-ear-hawkweed** Widespread and obviously long-naturalised on old railway sidings, Ashton Gate, ST5771, **G**, RJH, and later, JPM. This is easily distinguished from the common native **Mouse-ear-hawkweed**, and from **Fox-and-cubs** with which it occurs, by its pale green leaves and several darker yellow flowering heads on a stem up to 40 cm. **New to the Bristol Region**; located in the small enclave of v.c.34 south of the New Cut (contrary to the map in White's *Flora*).

Pilosella aurantiaca **Fox-and-cubs** Bath, ST7366, **S**, RLB.

Solidago canadensis **Canadian Goldenrod** River Avon, Bath, ST7464 and ST7465, **S**, RLB.

Solidago gigantea **Early Goldenrod** On verge of B3124 near Portishead, ST4674, **G**, JPM.

Conyza canadensis **Canadian Fleabane** By the River Avon, Bath, ST7265, ST7464 **S**, RLB, and on wall in ST7366.

Conyza sumatrensis **Guernsey Fleabane** Two plants at Wapping Railway Wharf, ST5872, **G**, JPM; one plant at edge of potato field south of Hallatrow, ST6356, **S**, HJC & Jim Crouch; one plant by traffic island at bottom of Farrington Road, Paulton, ST6456, **S**, HJC; near edge of quay, in industrial estate, Dunball Wharf, ST3040, **S**, HJC & EJM.

Erigeron karvinskianus **Mexican Fleabane** Bath, ST7365, ST7366, **S**; Brislington, ST6271, **S**; Weston-super-Mare, ST3258 and ST3358, **S**, all RLB.

Calendula officinalis **Pot Marigold** Lots of flowering plants growing in grass at the top of a field, Dundry Hill, ST5665, **S**, MW.

Xanthium spinosum **Spiny Cocklebur** Paulton, ST6556, **S**, HJC. Appeared in garden of 4 Gregory's Tyning, almost certainly arriving with bird seed.

Helianthus annuus **Sunflower** One plant on sea wall Severn Beach, *ST538, **G**, JPM.

Galinsoga parviflora **Gallant-soldier** Portbury village, ST5075, **S**, EN. The site found in 2006 near Portbury Church and where the plant had been seen in 2007 and 2008 was ploughed up in 2009 and replanted with *Trifolium pratense*, **Red Clover**. However there were still a few plants flowering in 2009. The extended site had thousands in 2009, many more than when first seen in 2007, though there were no plants seen there in 2008 after similar re-seeding. Also a significant number in a field used for market gardening at Jubb's Court Farm, Lower Failand, ST5173, **S**, EN.

Bidens frondosa **Beggarticks** Frequent at Wapping Railway Wharf, ST5872, **G**, JPM. *FBR* gives no grid references but describes it as well-established along the docks in Bristol, presumably in this square.

Elodea nuttallii **Nuttall's Waterweed** Moat House Farm, ST4873, **S**, PM & MW.

Arum italicum **Italian Lords-and-Ladies** Stoke Bishop, in quantity, ST5676, **G**, RLB. A single plant at roadside, North Road, Leigh Woods, **S**, DB, probably derived from garden rubbish. MARK and CML subsequently (in January 2010) saw several plants within the boundary of Leigh Woods, ST5673.

Spirodela polyrhiza **Greater Duckweed** At Home Farm garden pond, Tyntesfield National Trust, ST5071, **S**, PM.

Lemna minuta **Least Duckweed** In fenced pond south of Home Farm, Tyntesfield National Trust, ST5071, **S**, PM.

Lemna trisulca **Ivy-leaved Duckweed** Moat House Farm, ST4873, **S**, PM & MW.

Wolffia arrhiza **Rootless Duckweed** In ditch on west side of long thin field south of River Sheppey, Godney Farm, ST4842, **S**, HJC & Chris Billinghurst.

Sasa palmata (Burb.) E.G. Camus **Broad-leaved Bamboo** Two clumps, Paradise Bottom, Leigh Woods, ST5474, **S**, JPM. Not in *FBR* but there are 1987-1999 records in the BSBI Atlas for ST47 and ST 67 which should have generated an entry.

Pseudosasa japonica **Arrow Bamboo** Established since before 1980 below gardens in Leigh Woods near the Suspension Bridge, and visible from Observatory Hill, *ST5673, **S**, CML, but not hitherto formally reported.

Avena fatua **Wild-oat** Moat House Farm, ST4873, **S**, HJC, PM & MW.

Lagurus ovatus **Hare's-tail** Sand Bay, in two places in, ST3364, **S**, HJC & MW: Several hundred flowering spikes over an area 5m x 2m, on landward side of dunes, opposite house no. 48; many plants on E side of road, just N of middle car park, alongside a double 5-bar gate.

Polypogon viridis **Water Bent** Fishponds, ST6375, **G**, AGS. Growing in pavement by house wall, several sites locally, early and late-flowering due to spring rain and early summer drought. Near edge of quay, in industrial estate, Dunball Wharf, ST3040, **S**, HJC & EJM.

Echinochloa crus-galli **Cockspur** Common in field margins at SE end of Tait Wood, near Hinton Charterhouse, *ST7657, **S**, JPM.

Setaria pumila **Yellow Bristle-grass** Occasional in field margins at SE end of Tait Wood, near Hinton Charterhouse, ST7657, **S**, JPM.

Pontederia cordata L. **Pickerelweed** Berrow Dunes, ST2952, **S**, RGC. Three or four plants at edge of pond on golf course. First record in the wild for Somerset but possibly planted originally. RLB had earlier noted it in 2006 as a planted exotic in a pond on the golf course at Westbury on Trym, ST 5677, **G**.

Hyacinthoides hispanica **Spanish Bluebell** Pucklechurch, ST7075, **G**; Rookery Lane, ST7175, **G**, both RLB.

Muscari armeniacum **Grape Hyacinth** In gutter, Bath, ST7365, **S**; hedgebank, Pucklechurch, ST7075, **G**; Avonmouth, ST5379, **G**, all RLB.

Allium triquetrum **Three-cornered garlic** Avonmouth, ST5277, **G**. RLB; a well-established patch in hedgerow at east side of car park, Stratton-on-the-Fosse, ST6550, **S**, CVWG per HJC; Weston-super-Mare, ST3259, **S**, RLB.

Allium paradoxum **Few-flowered Garlick** Newark Park, *ST7793, G, JPM. Outside the garden, spreading from within.

Leucojum aestivum ssp. *pulchellum* **Summer Snowflake** Single roadside clump near Midger Wood, ST7989, **G**, CK & MARK. Four records in *FBR* and one since (BB 2008).

Cordyline australis (G. Forst.) Endl. **Cabbage-palm** Sand Bay, ST3364, **S**, HJC & MW. Two plants at top of dunes, on seaward side of fence. **New to the Bristol Region**.

Acknowledgements
I would again like to thank all contributors for their interesting plant records, and particularly the BSBI recorders, Clare and Mark Kitchen (**G**) and Helena Crouch (**S**) for their records and comments, and assistance in determining the significance of the finds. To Pam Millman, receiving secretary for the records I am also very grateful.

Cinquefoil

A 19TH CENTURY LICHEN COLLECTION OF GERMAN ORIGIN IN BRISTOL MUSEUM (BMGA)

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Abstract
An important collection of 4815 lichens and lichenicolous fungi was acquired in the second half of the 19th century by Frederick Adolph Leipner. Although virtually ignored since its arrival at Bristol, it has now been curated, the original packets being cleaned and individually placed intact within transparent acid-free packets, boxed and filed alphabetically according to genera/species. Modern nomenclature has been employed where possible, but considerable further taxonomic work needs to be done. Almost 100 collectors are represented, including many of the most famous 19th century lichenologists of Germany and elsewhere. The value of this collection lies not only on the basis of these collectors but also on the fact that specimens may duplicate those sadly destroyed in Germany as a result of enemy action during the Second World War.

INTRODUCTION

The former ownership of the collection (hereafter referred to as the "Leipner" collection) was probably Bernhard **Auerswald** (b. Linz, Sachsen 19.3.1818, d. Leipzig, 30.6.1870 – see Grummann 1974, Frahm & Eggers 2001, Türk & Riegler-Hager 2003), who donated it to (or it was purchased by) Frederick Adolph **Leipner** (b. Dresden 13.8.1827, d. Clifton, Bristol 1.4.1894). Leipner used only his second name Adolph after he emigrated to England in 1848, but in reality his naturalisation papers for 1863 (held at The National Archives, Kew) show that he was formerly Friedrich Julius Adolph. According to Goodbody (1988) he did "not seem to have held any university degree", but by 1854 he was teaching German and natural science at Clifton, and in 1856 became a member of the Bristol Microscopical Society. He was appointed one of seven assistant masters at the newly opened Clifton College in 1862 (Pippard 2002), and later trained at the Bristol Medical School (but did not complete the course) whilst lecturing in botany and natural philosophy.

In 1876 he was appointed as lecturer in botany, zoology and, interestingly, German (Goodbody 1988) at University College (precursor to the University), but also continued to lecture in the Medical School, and appointed the first Professor of Botany in 1884. He founded the University's Botanic Garden in 1882 (Delaney & Winn 2002), and was a founding member of the Bristol Naturalists' Society in 1862 (Anon. 1899), from when he held the honorary secretaryship until he became its President in 1893 (Phillips 1962). It was through a fellow member of the Bristol Naturalists' Society, William Spicer, that Leipner was the recipient of the rare cave-dwelling amphibian *Proteus*, which he exhibited at a Society meeting in 1868 (Shaw 1999).

Biographical information on Leipner is rather meagre (cf. Desmond 1994), particularly his earlier life (cf. Anon. 1899, Delaney & Winn 2002); he appears to have published little, albeit on diverse subjects (e.g. Leipner 1857, 1876), and herbarium material is scarce – his mosses are in Bristol Museum (474 specimens according to the 1908 Museum Report), and his algae are in Wrocław, Poland (Chaudhri *et al.* 1972); some of his letters are in the Broome and Günther correspondence in The Natural History Museum, London (Bridson *et al.* 1980) and in the Alfred Newton correspondence in Cambridge University Library. However, he was praised for the extended summer rambles he and George Burder organized and conducted, which "were attended by a swarm of young people infected by the enthusiasm of their leaders and attracted by the geniality, kindliness and sympathy for which they were remarkable" (White 1912). In 2005, a blue plaque to celebrate his life and work was unveiled at his home, 47 Hampton Park, where he resided from 1870 until his death.

The earliest and latest collection dates are 1816 and 1865 respectively, so the "Leipner" collection came to Bristol after 1865. If the collection was donated by Auerswald himself, then Leipner received it between 1865 and 1870; any posthumous donation or purchase was between 1870 and 1894. No record of this transaction has come to light. Although it is briefly mentioned under "European Lichens" in Trebilcock (2007), it would appear that since the collection's arrival at Bristol it has been virtually ignored, and therefore details of its scope (taxonomic, geographical and biographical) have not been investigated. Almost 100 collectors are represented (see below), including many of the most famous 19th century lichenologists of Germany and elsewhere. The value of this collection lies not only on the basis of these collectors but also on the fact that specimens (as yet not evaluated) may duplicate those sadly destroyed in Germany as a result of enemy action during the Second World War.

The material of the "Leipner" collection has now been curated, the original packets being cleaned and individually placed intact within transparent acid-free packets, boxed and filed alphabetically according to genera/species. Modern nomenclature (mainly according to Smith *et al.* 2009) has been employed where possible, but considerable further taxonomic work needs to be done.

COLLECTORS (those represented by numerous packets given in **bold**)

Arnold, F.C.G. (1828-1901), **Auerswald, B.** (1818-1870), Aunier, J.J.N.A. (1781-1859), Baenitz, C.G. (1837-1913), **Bagge, H.** (1817-1895), Bayrhoffer, J.D.W. (1793-1868), Beckhaus, C.F.L. (1821-1890), Benesch, D. (?-1884), Bilimek, D. (1812-1884), Breutel, J.C. (1788-1875), **Bulnheim, C.O.** (1820-1865), **Clemençon** (??), Croall, A. (1809-1885), Cuming, H. (1791-1865), Delitsch, O. (1821-1882), **Ducommun, J.-C.** (1829-1892), Durieu de Maissonneuve, M.C. (1796-1878), **Ecklon, C.F.** (1795-1868), Eversmann, E.F. von (1794-1860), Fiedler, K.F.B. (1807-1869), Flörke, H.G. (1764-1835), **Flotow, J. von** (1788-1856), Förster, A. (1810-1884), Freidrichsthal, E.R. von (1809-1842), **Fries, E.M.** (1794-1878), **Fuisting, W.** (1839-1870), Funck, H.C. (1771-1839), Garcke, F.A. (1819-1904), Garovaglio, S. (1805-1882), Greville, R.K. (1794-1866), Gueinzius, W. (1814-1874), Hampe, G.E.L. (1795-1880), Hausmann zu Stetten, F. von (1810-1878), Hazslinszky de Hazslin, F.J. (1818-1896), Heufler zu Rasen, L.J. (1817-1885), Hillardt, C. (??), Hochstetter, C.F. (1787-1860), Holl, C.F. (?-1850) , **Jack, J.B.** (1818-1901), Juratzka, J. (1821-1878), Karl, W. (1802-1870), Kegel, H.A.H. (1819-1856), **Körber, G.W.** (1817-1885), Kotschy, C.G.T. (1813-1866), Krempelhuber, A.von (1813-1882), Kühlewein, P.E. von (1798-1870), Lahm, J.G.F.-X. (1811-1888), Lambl, D.V. (??), Lang, O.F. (1817-1847), Laurer, J.F. (1798-1873), Leiner, L. (1830-1901), Lenormand, S.-R. (1796-1871), Lojka, H. (1844-1887), Lomler (??), Lundberg (??), Marsson, T.F. (1816-1892), Mettenius, G.H. (1823-1866), **Metzler, A.J.** (1813-1883), Montagne, J.P.F.C. (1784-1866), Mudd, W. (1830-1879), **Müller, J.** [= Müller Argoviensis] (1828-1896), **Nitschke, T.R.J.** (1834-1883), Notaris, G.N. de (1805-1877), Opiz, M.P. (1787-1858), Pabst, C. (c.1826-1863), Poeppig, E.F. (1798-1868), Poscharsky, G.A. (1832-1915), **Rabenhorst, G.L.** (1806-1881), **Rehm, H.S.L.F.F.** (1828-1916), **Reichenbach, H.G.L.** (1793-1879), Rossmässler, E.A. (1806-1867), Runkel, C. (??), **Russ, G.P.** (1811-1879), Sauter, A.E. von (1800-1881), Schaerer, L.E. (1785-1853), Schleicher, J.C. (1768-1834), Schliephacke, K. (1834-1913), Schmalz, E. (1801-1871), Schubert, C. (??), Schumann P. (??), Siebenhaar (??), Sieber, F.W. (1789-1844), Siegmund, W. (1821-1897), Stizenberger, E. (1827-1895), Strasser (??), **Veselsky, F.** (1813-1866), **Vetter, J.J.** (1826-1913), Wallroth, [C.] F.W. (1792-1857), Walther, A.W.H.F. (1813-1890), Webb, P.B. (1793-1854), Weigelt, C. (?-1828), Wenck, E. (1811-1896), Wienkamp, G. (?-1875), **Willkomm, H.M.** (1821-1895), **Wilms, F.H.** (1811-1880), Wimmer, C.F.H. (1803-1868), Winkler, M. (1812-1889), **Wüstnei, C.G.G.** (1810-1858), Zwackh-Holzhausen, P.F.W.R. von (1825-1903)

In addition, there are several packets of the following four **Exsiccatae** (see Sayre 1969, 1975): (1) Ferdinand Arnold, (2) Gottlob Rabenhorst, (3) Heinrich Reichenbach & Carl Schubert, and (4) *Unio Itineraria* (sub Carl Kotchky).

GEOGRAPHICAL SCOPE

Material from the following countries has been confirmed: Algeria, Angola, Australia (as Nova Hollandia), Austria, Czech Republic (as Bohemia), Brazil, Canada (Labrador), Chile, Cuba, Germany, Greenland, Guatemala, Hungary, India, Greece (as Macedonia), Madeira, Martinique, Mauritius, Mexico, Morocco, Norway, Peru, Poland, Russia (Kamchatka), Sardinia, Scotland, Slovakia, South Africa (mainly Cape of Good Hope), Spain (Cadiz), Sumatra, Surinam, Sweden, Switzerland and USA (Massachusetts, California); material has also been tentatively assigned to England, France and Italy.

TAXONOMIC SCOPE

In all, there are 4815 packets of lichens and lichenicolous fungi (and some non-lichenized fungi) currently filed under the following genera (numbers of packets, with no duplications, indicated):

Abrothallus 13, *Acarospora* 21, *Acrocordia* 24, *Alectoria* 16, *Allocetraria* 6, *Amandinea* 28, *Amygdalaria* 3, *Anaptychia* 15, *Anisomeridium* 4, *Architrypethelium* 1, *Arctoparmelia* 9, *Arthonia* 86, *Arthopyrenia* 54, *Arthothelium* 8, *Arthrorhaphis* 6, *Arthrosporum* 6, *Aspicilia* 57, *Bacidia* 53, *Bactrospora* 2, *Baeomyces* 9, *Bagliettoa* 1, *Bellemerea* 2, *Biatora* 60, *Biatorella* 2, *Biatoridium* 1, *Bilimbia* 23, *Brodoa* 8, *Bryocaulon* 1, *Bryoria* 15, *Buellia* 47, *Bundophoron* 2, *Calicium* 83, *Caloplaca* 152, *Candelaria* 10, *Candelariella* 8, *Carbonea* 2, *Catapyrenium* 6, *Catillaria* 15, *Catolechia* 2, *Celidium* 1, *Cetraria* 42, *Chaenotheca* 84, *Chaenothecopsis* 15, *Chiodecton* 2, *Chrysothrix* 3, *Cladia* 2, *Cladonia* 651, *Clauzadea* 9, *Cliostomum* 14, *Coccodinium* 1, *Coenogonium* 3, *Collema* 156, *Coniocybe* 2, *Cornicularia* 7, *Coscinocladium* 1, *Cresponea* 3, *Cyphelium* 20, *Cyrtidula* 3, *Dacampia* 4, *Dactylina* 2, *Dactyospora* 5, *Degelia* 1, *Dermatocarpon* 29, *Dibaeis* 4, *Dimelaena* 3, *Dimerella* 8, *Diploicia* 3, *Diploschistes* 43, *Diplotomma* 15, *Dirina* 1, *Dirinaria* 1, *Endocarpon* 14, *Endococcus* 1, *Enterographa* 6, *Eopyrenula* 3, *Ephebe* 5, *Epilichen* 3, *Evernia* 17, *Farnoldia* 2, *Flavocetraria* 12, *Flavoparmelia* 11, *Frutidella* 1, *Fulgensia* 8, *Fuscidea* 9, *Fuscopannaria* 10, *Glyphis* 5, *Graphis* 41, *Guignardia* 2, *Gyalecta* 28, *Haematomma* 9, *Harpidium* 1, *Helvella* 1, *Heppia* 1, *Heterodermia* 10, *Hymenelia* 20, *Hyperphyscia* 3, *Hypocenomyce* 8, *Hypogymnia* 24, *Hypotrachyna* 3, *Icmadophila* 17, *Imshaugia* 5, *Ionaspis* 2, *Julella* 4, *Lasallia* 6, *Lecanactis* 17, *Lecania* 52, *Lecanographa* 10, *Lecanora* 250, *Lecidea* 54, *Lecidella* 69, *Lecidoma* 5, *Leifidium* 1, *Lempholemma* 8, *Lepraria* 4, *Leprocaulon* 5, *Leptogium* 90, *Leptorhaphis* 14, *Letharia* 5, *Lichina* 6, *Lithographa* 1, *Lobaria* 22, *Lobothallia*

14, *Loxospora* 7, *Massalongia* 2, *Megalospora* 3, *Megaspora* 4, *Melanelia* 35, *Melaspilea* 2, *Menegazzia* 7, *Micarea* 26, *Microcalicium* 8, *Miriquidica* 1, *Moelleropsis* 3, *Mycoblastus* 5, *Mycomicrothelia* 2, *Myriotrema* 5, *Neofuscelia* 2, *Nephroma* 16, *Neuropogon* 1, *Normandina* 2, *Ocellularia* 3, *Ochrolechia* 31, *Opegrapha* 145, *Ophioparma* 6, *Pachyphiale* 7, *Pannaria* 15, *Parmelia* 21, *Parmeliella* 12, *Parmelina* 15, *Parmeliopsis* 16, *Parmotrema* 17, *Peccania* 2, *Peltigera* 69, *Peltula* 3, *Pertusaria* 53, *Petractis* 10, *Phaeographis* 9, *Phaeophyscia* 15, *Phlyctis* 6, *Physcia* 43, *Physconia* 19, *Physma* 1, *Placidiopsis* 1, *Placidium* 9, *Placocarpus* 7, *Placolecis* 2, *Placopsis* 2, *Placopyrenium* 2, *Placynthiella* 16, *Placynthium* 6, *Platismatia* 15, *Plectocarpon* 1, *Pleopsidium* 8, *Pleurosticta* 11, *Poeltinula* 2, *Polyblastia* 5, *Polychidium* 5, *Polycoccum* 1, *Polymeridium* 3, *Porina* 21, *Porpidia* 27, *Protoblastenia* 11, *Protoparmelia* 6, *Pseudephebe* 2, *Pseudevernia* 11, *Pseudocyphellaria* 4, *Psilolechia* 3, *Psora* 24, *Psorinia* 1, *Psoroma* 7, *Psorotichia* 2, *Pterygiopsis* 1, *Punctelia* 4, *Pycnothelia* 9, *Pyrenastrum* 1, *Pyrenocollema* 1, *Pyrenotea* 10, *Pyrenula* 34, *Pyrgidium* 1, *Pyrrhospora* 9, *Ramalina* 73, *Relicina* 1, *Rhizocarpon* 53, *Rhizoplaca* 10, *Rimularia* 2, *Rinodina* 54, *Rinodinella* 1, *Roccella* 27, *Ropalospora* 1, *Sagiolechia* 2, *Sarcographa* 5, *Sarcogyne* 13, *Schaereria* 6, *Schismatomma* 12, *Sclerophora* 7, *Sclerophyton* 1, *Scoliciosporum* 11, *Siphula* 2, *Solenopsora* 1, *Solorina* 11, *Sphaeria* 2, *Sphaerophorus* 12, *Sphinctrina* 20, *Sporastatia* 4, *Sporodictyon* 1, *Squamarina* 32, *Staurothele* 12, *Stenocybe* 7, *Stephanophorus* 1, *Stereocaulon* 60, *Sticta* 26, *Strigula* 8, *Synalissa* 5, *Syncesia* 1, *Teloschistes* 15, *Tephromela* 20, *Thamnolia* 12, *Thelenella* 2, *Thelidium* 11, *Thelopsis* 2, *Thelotrema* 8, *Thrombium* 6, *Thyrea* 1, *Toninia* 34, *Trapelia* 11, *Trapeliopsis* 35, *Tremolecia* 1, *Trypethelium* 8, *Tuckermanopsis* 2, *Tuckneraria* 1, *Umbilicaria* 76, *Usnea* 56, *Varicellaria* 2, *Verrucaria* 99, *Vulpicida* 9, *Xanthoparmelia* 19, *Xanthoria* 49

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Trees in and around Nailsea by Terry Smith

Trees in and around Nailsea is a beautifully illustrated scholarly account which costs £5 and may be obtained direct from the author at t.a.smith@blueyonder.co.uk. It was published in cooperation with Nailsea Council and examines the history of tree planting in Nailsea, as well as the individual species. It looks at some of the magnificent ancient trees that have survived, and at the problems of maintaining trees safely in an urban area. It is particularly strong on the fungi associated with some species, the various specific uses of the wood from particular trees, and the complex relationship between trees and insects.

It not only details exactly where the trees mentioned can be found, with eight figure grid references, but provides the detail of both height and girth that are so often lacking. Because most deciduous trees grow at a more or less constant rate of 2.6 cm a year the girth gives a clear indication of the age of a tree. There is often detail of the history in this country of the many species imported from abroad. It is interesting that very few non-native species have managed to establish themselves in the wild. Even Horse Chestnut, which dates back to the seventeenth century and readily regenerates from seed, has never managed to create a Horse Chestnut wood. However Holm Oak, or Evergreen Oak as he calls it, has formed pure woodlands in the region, and Turkey Oak is also very vigorous. And both Laurel and Rhodendron on acid soils are capable of dominating native species in some situations.

As one would expect from a chemist there is also smattering of chemical formulae, and an explanation of the complex roles that different chemicals play in the life of trees, and the uses that we make of them. There is a section on Mistletoe, which is a fascinating parasite that appears to be spreading quite fast in our region, and another on Ivy, which emphasises the importance of this species in providing nectar throughout the late autumn, and whose berries then ripen sequentially from January to the end of March, at a time when all other berries have usually been consumed.

Finally there are very valuable sections dealing with labelling trees, staking trees, and measuring trees, and a note on the Tree Warden scheme. The colour photographs are particularly striking, and there is an excellent section of 28 photos of trees that are not otherwise covered in detail in the text. In other words this slim paperback is packed with good things from which everyone can learn something. It is also an exemplar that could and should be copied by other villages and communities. Trees matter, and public support for them and understanding of them is crucial to their long-term future.

An investigation into the effect of urban garden surface and hedging on house sparrow *Passer domesticus* abundance in Bristol.

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1 Aim

The aim of this investigation is to try to identify if there is any relationship between the abundance of house sparrows *Passer domesticus* and the make up of front gardens across the city of Bristol: in particular looking at the proportion of front gardens that have been paved over, often to provide car standing space or for ease of maintenance. In addition the proportions of front gardens that were surrounded by hedges, or at least had some hedging, were looked at in relation to the observed abundance of house sparrows. Other considerations were bird species richness in relation to the above and also if the predominant house age / type had an impact on the house sparrow population observed.

One of the reasons for undertaking this piece of work was a growing awareness by the author of the increase in number of residential gardens across Bristol that were being converted away from grass, trees, shrubs and flower borders to paving, gravel, concrete or other hard standing surface. In investigating any research on the environmental impact of these sorts of changes, a document which was commissioned by the London Assembly Environment Committee was found to result in a report entitled: *Crazy Paving: The environmental importance of London's front gardens* (Sept 2005). This research was obviously looking at London residential areas but there is no reason to suppose that the finding would be very different for a city such as Bristol. The report estimated that around two-thirds of London's gardens were, at the time of the report, at least partially covered by paving, bricks, concrete or gravel instead of plants. This, combined with the 'heat island effect' resulting in the increase of local temperature, was likely to be contributing to a general loss of wildlife habitat and a reduction in the wildlife associated with even tiny front gardens. If this is also occurring in Bristol this might be a contributory factor for the decline in house sparrow numbers, either directly from drop in suitable habitat or from a decline in available food supplies.
It was predicted that there would be lower house sparrow abundance in areas where there was more paving and higher abundance where there was more hedging. It was also predicted that bird species richness would not be affected in a similar way.

2.Methods

This research was based on data collected by observation in the field, reinforced by accessing information through Google Earth internet software.

All observations were carried out by the author across the city of Bristol. Initially, the existing raw data from Bland,R.L. (1998) was used to identify 20 research areas of 1-km^2 quadrats to be surveyed in the city. Ten quadrats were selected from those having the highest number of house sparrows (over 50) in the square km, labelled 'high' sparrow abundance, and ten having the lowest (under 10), labelled 'low' sparrow abundance. The areas identified were distributed widely, from Shirehampton in the west to Horfield in the east and then from Henbury in the north to Hartcliffe in the south.

All surveys were carried out between February and April 2010 which fitted in with the desired timescale for the report but also being the months when the male house sparrows start cheeping as part of their process of pairing up for breeding. Site visits were scheduled for early morning – between 8am and 10.30am. This was identified as the time for maximum house sparrow activity, thereby increasing the chances of seeing as many of the local population as possible.

During these months the weather can be very variable but visits were not undertaken in heavy or continuous rain or windy conditions, again to ensure that the sparrows were out and about and not taking shelter.

Within each of the twenty quadrats, and using a city street map, transects of length 500m were chosen for the observational visits. Since the research involved considering front gardens, wherever personal knowledge permitted, residential streets were picked, avoiding features such as parks and school grounds.

On any one day, walks were planned so that the number of quadrats identified as having high sparrow abundance surveyed were the same as the number having low abundance. This counterbalancing was to ensure that any impact of the weather conditions on the bird activity did not have an overall effect on the data. Walks were only along streets and not down footpaths or side lanes as these could present a different habitat.

Each transect was walked twice; during the first traverse data was collected on i) house sparrow numbers, ii) starling numbers and iii) number of other bird species identified (species diversity) and then on the return walk records were made of house type and the proportion of each front garden that was paved over and the proportion that was hedged. These were recorded as 'No paving', 'Some paving', 'All paving' and 'No hedges', 'Some hedges', 'All hedges'.

Google Earth was used to check the number of houses for each transect to enable housing density for each transect to be calculated. Predominant house types were identified under 4 groupings, using the following categories: i) historical (Victorian/Georgian, mainly terrace/semi-detached) ii) inter-war (between 1919 and 1945, mainly semi-detached) iii) post-war (1960-1990s, small terraces and semi-detached) and iv) modern (recent builds, whatever style) (Wotton 2002 and Mason 2006).

Only details of front gardens that were actually along the transect street frontage were recorded. Since only residential birds were of interest, it was decided not to record those birds using the area as a corridor so birds seen flying over the area were not noted, unless they were flying below roof height.

Initially it was thought that the number of cheeping male house sparrows could be used as an index for the population size but after a trial run it was decided to aim to count all individuals present. Because house sparrows tend to flit about from one shrub or gutter to another and then back again it was still likely to be difficult to count every bird. Following suggestions from a local bird expert, it was decided that some measure of estimation was going to be necessary; extrapolating by assuming that one individual seen meant that at least four were present, was carried out when birds could be heard but not all of them seen (Drewitt,E., pers.comm.).

3. Results

Comparison with previous data

It was decided that any analysis should not separate out those transects identified as having high house sparrow abundance from those have low abundance. The reason for choosing quadrats of high and low areas based on Richard Bland's work (1998) was to ensure that a range of sparrow abundance would be found within the transects. Analysing high versus low areas was not the focus of this study, however it is of interest to see if the areas originally classed as high and low still have high and low house sparrow abundance after 12 years.

For the 'high' transects the mean sparrow abundance is 16.3 with standard deviation 9.06 and for the 'low' transects the mean is 1.6 and standard deviation 2.79. Therefore the mean sparrow abundance in areas originally classed as high abundance by Richard Bland were also found to be high abundance areas in the survey. The converse applied to low abundance areas.

House sparrows and starlings

The abundance of houses sparrows and that of starlings was found to be positively correlated, again reflecting the findings from Bland (1998). Although the two bird species seem to be linked, it remains unclear what the connection is. The main food source for starlings is invertebrate, in particular leatherjackets *Tipula* larvae. In searching for food for their hatchlings, parent house sparrows do not restrict themselves to any particular species – therefore not directly competing with the starlings (Crick 2002, Vincent 2006). Tests showed that there was no relationship between starling abundance and either the paving score or the hedging score. Research remains to be undertaken on this association between house sparrows and starlings.

Paving, hedging and housing type

Purely from observation it seemed in streets with all four housing types that front gardens were predominantly paved. From the data, the mean paving score was higher for the older houses (historical and inter-war) – reducing as the house age decreased. A limitation of the data collected was that it did not include the depth of the front garden space, between the house building and the start of the pavement. Of the houses passed, the historical houses in particular, had shallow front gardens, perhaps more likely to be paved or concreted over; this might account for the higher paving score for historical housing. Although the paving score was lowest for modern housing, the degree of variation was greatest; but the sample size for modern housing was only three. One of the quadrats with modern housing consisted of a row of town houses, Culverwell Road with mainly paved, limited front garden space and another comprised large detached houses, Glenavon Park, with very large front gardens with only some paving. With these two extremes of values and a sample size of only 3 there can be no case for drawing conclusions about paving score and modern housing type. Hence there is little evidence that housing type is related to the paving score.

The mean hedging score is highest for modern housing and lowest for post-war housing. Here the variation is particularly high for the modern and historical types – once again showing no evidence for any strong relationship between hedging score and housing type.

Paving, hedging and house sparrows

The correlation test found there to be no association between house sparrow abundance and the score given for each transect for paving. Consequently there was no evidence to support the hypothesis that the reduction in green front garden space, as quantified by a score for paving, is related to the numbers of sparrows found within the area.

Similarly no association was found between house sparrow abundance and the score given for each transect for hedging. So again, no evidence was found to support the hypothesis that the proportion of hedging in front gardens, as quantified by a score for hedging, is related to the number of sparrows found.

Species diversity was measured by the number of bird species other than house sparrows and starlings that were identified during each transect traverse. The correlation test found that there was no association between either the paving score or the hedging score and species diversity. Further information on what the different species were and their abundance could be interesting to survey. These species and their relative habits and habitats could be investigated in relation to the proportion of greenery, and possibly the species of hedging plants found.

4 Limitations of this study

One of the limitations of this survey is that only front gardens were considered. Looking at the mean of numbers of houses along each of the transects, there were most houses along transects with inter-war housing and least with modern housing but there was a similar degree of variability across all housing types. Consequently if the mean number of houses along the 500m transects is not significantly different, the width of gardens is not significantly related to the housing type.

So, if the width of the gardens and the proportion of paving or hedging is not relevant, is it possible that there is something about the gardens at the back of the houses that could be influencing the house sparrow numbers? With a regular home range of sparrows being up to 1km (Summers-Smith 1963, Crick 2002), a circle of diameter 1km would include both front and back gardens as well as alleyways and back lanes. The transects with predominantly inter-war and post-war housing had a higher house sparrow abundance; what it is about these areas that leads to greater sparrow numbers? One possibility could be that these developments included larger back garden areas as well as communal small green areas in between, in front of and behind blocks of housing. These areas, and the habitat conditions they present, were not considered in this survey, neither were depth of any gardens, front or back.

5 Future study possibilities

Looking at the wider habitats available to house sparrows in Bristol, in particular size and content of back gardens, could lead to further scientific research. Wilkinson (2006) identified the house sparrow preference for native species and a higher density of bushes and Vincent (2006) recorded that ornamental and evergreen shrubs were avoided by the sparrows.

Could it be that these Bristol inter-war and post-war gardens have a higher proportion of greenery in these preference groups in their possibly larger gardens? It might relate directly to the selection of plants available for roosting, nesting and perching or it might be the invertebrate populations that these plants support.
Vincent (2006) claims that the decline in house sparrow numbers is due to a reduction of invertebrate food for the feeding of sparrow hatchlings in their early stages; but what has led to this decline in invertebrate abundance?

There might be a clue in the approach taken by Shaw *et al.* (2008). It was proposed that certain gardens presented a much more suitable habitat for house sparrows: neglected areas with rough grass, nettles, weedy patches and more native shrubs. These conditions present insect rich foraging – ideal for sparrows. Vincent (2006) makes a link to socio-economic deprivation, not a connection that everyone might be comfortable with. Nevertheless, it should not be ignored that neglected gardens or green areas are attractive to sparrows. Could it be that the inter-war and post-war housing type areas in Bristol have larger, more neglected gardens? Certainly from observation, the gardens that were visible in the historical transects were often well kept and tidy and maybe the gardens of the modern houses were similarly maintained. Only a survey of house sparrow abundance in parallel with a questionnaire to householders with regard to their garden maintenance habits could identify such a relationship. Wilkinson (2006) has already identified that insecticide use is not a factor associated with house sparrow decline. Maybe habits of keeping gardens weed and scrub free, lawns short, with hedges and shrubs tightly clipped, might all contribute to habitats less suited to house sparrows.

6 Recommendations

Through this research it has not been possible to make any progress to towards identifying the causes of the decline in house sparrow abundance in Bristol. The movement to pave over front gardens has been shown not to be related to the house sparrow population. Many possible ideas have been put forward – but none has been shown to be directly and only responsible. It is the author's opinion that the answer is likely to be a complex combination of many of the proposed explanations discussed above. Emerging are some clear guidelines as to preferred habitats of house sparrows: suitable native plant selection providing cover and invertebrate sources, gardens and green areas that are left to develop with rough grass, nettles and brambles and finally suitable nest sites, either in creeper, crevices in buildings and under roofs or boxes. As with the Bristol Biodiversity Action Plan for house sparrows (Bristol Biodiversity Action Plan 2010), maybe efforts should be concentrated on the protection of existing house sparrow populations and raising public awareness of measures that can be taken by householders and councils to provide the best possible conditions to encourage house sparrows.

House Sparrows and Garden vegetation

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1 Reasons for Research

Private gardens provide substantial resources for urban birds. However recent years has seen an increase in home improvements and demand for off-street parking which has led to substantial change in habitat structure, especially in front gardens (Pauleit, Ennos, & Golding).The presence of rough grass, nettles and weedy patches is linked to increased bird diversity in urban areas (Chamberlain, Toms, Cleary-McHarg, & Banks, 2007) which does suggest that tidy gardens with high proportion of paving make a less suitable habitat for foraging birds. This may cause problems for adult House Sparrows in the breeding season when insect based food is required for nestlings. Vincent found that the fledgling success of House Sparrows was higher in areas of high insect abundance, and chicks were less like to starve when fed a high proportion of insects as opposed to vegetable food (Vincent, 2006). Her study indicated that urban House Sparrow success in fledgling young was higher in areas containing a high proportion of native shrubs and traditional council estates. Such estates, and in particular back-to-back terraced housing, provide blocks of garden habitat which can provide both cover and insects for foraging birds.

My research, done in early 2010, was based on the assumption that changes in habitat structure to gardens might be a reason for House Sparrow decline. I would study the plant composition and how it might influence House Sparrow numbers.

2. Aims of investigation

My intention was to examine the correlation between the level of species richness provided by plant cover in urban gardens, which I would achieve by cataloguing plants that were present: whether they be certain types of trees, scrub, native plants or ornamental shrubs. I was looking for a link between the existence of sparrows and their preferred habitat requirements. I did my best to record as much of the content of all the front gardens but in the end for speed and to collect relevant data I then recorded the greater percentages of paving etc. Where most gardens were a mixture or mosaic of shrubs, tree, paving and grass, I had to make the decision to record whether plants or paving occupied the greatest percentage of the garden.

Identifying different plant species proved problematical so, I refined my recording to the main common species such as privet and holly, and recorded whether trees were deciduous or conifers. Hedges included Privet, Bramble, Forsythia, Laurel and Pyrancantha, ornamental grass and shrubs including Bamboo. Deciduous trees were not easy to identify as leaves were not present at this time of year.

3 Correlation of Sparrow count with Habitat

Large populations of House Sparrows were found in high density areas (A) such as Meadow Grove, Shirehampton, Ringwood Crescent, Southmead, Bideford Crescent, and Filwood Park which consist of large council housing estates which were built pre-war and post war to house families cleared from slums in central Bristol. Council housing, now many privately owned, consisted of mainly low density cottage style houses in pairs or short rows, with sizeable gardens (Walmsley, 2005). Many of these areas retain a lot of privet hedging, which was a commonly planted to establish boundaries between gardens in such estates. These areas are associated with social problems which mean houses and gardens are often not cared for.

In one area (Culverhill Road, Hartcliffe) where there was supposed to be a high density of sparrows, I found none. This road consisted mostly of recently built terraced housing with paved front gardens, few shrubs, trees or hedges, and short driveways (around 8 to 9 metres) which mostly provided parking for a single car. There was one house with a large scrub garden full of rubbish, four cars, a caravan and a very high privet bush, but there were no signs of House Sparrows.

In the low density areas (B), sparrow populations were missing totally from a majority of areas, although one area did contain eight. The common feature in all these areas was not the age of the house, ranging from Victorian to modern, but that the houses were largely well maintained and roofs generally closed off so that sparrows could not nest there. The gardens were usually well maintained, containing largely ornamental shrubs, some trees, cut lawns and large amounts of paving and garaging for cars.

In the three areas De Clifford Road (B1), Abbey Road/Lyndhurst Gardens (B3) and Arnall Drive, Henbury (B2), small numbers of sparrows were discovered near to unattended scrubland bordering an embankment containing bramble and privet next to Blaise Castle estate, which contained ample nesting areas for a wide range of birds. The other portion of Abbey Road/Lyndhurst Gardens (B3), which had the same features as other B category areas, contained eight sparrows located near a dilapidated house with overgrown garden. Google Maps revealed there was a substantial allotment behind the back gardens of some of these houses .

Two positive correlations were found, between the presence of scrub, as shown in Table 1 below, and the presence of Privet hedges shown in Table 2.

Area Scrub value	Area Sparrow nos
0	0
0	8
1	0
1	4
1	6
1	8
2	4
2	15
2	23
2	26
3	27

Table 1 The relationship between the scrub value for an area and the house sparrow numbers.

		Sparrow nos
No privet areas	11	4
Privet present areas	9	16

Table 2 Relationship between the presence of privet in an area and house sparrow numbers.

4 DISCUSSION

The data showed that sparrows like privet and scrubland, but not ornamental plants and trees, although most deciduous trees had no leaves as it was early spring, and so provided no cover.

Evaluation of methodology

The line transect method is popular because it allows the surveyor to cover more ground in a fixed amount of time, and can generate large amounts of data or samples. The method is used in the BBS (Breeding Bird Survey) carried out by volunteers every year for the British Trust for Ornithology (BTO). Its purpose is to count all species of birds and define densities according to types of habitat in a particular area. Comparisons can then be made between species abundance, densities and types of habitats.

Figures of sparrows can only be approximate as sighting of sparrows are difficult because they like to hide in foliage and often fly between favourite haunts. Counts were often taken by listening to noise volume of sparrow cheeps, which had to be approximate.

Limitations of the investigation

The habitat composition around an occupied nest-box can be an important predictor of nesting success (Vincent, 2006). It would have been beneficial to have more time to study areas of high numbers of sparrows and their habitat composition. Habitat composition could have been mapped within 70 metre of each occupied nest-box. House Sparrows will not usually fly more than 200 metre from their nest site to forage for food (Summers-Smith J. D., 1963). More accurate identification of plants might have led to more accurate assessment of what native and non-native species were present. This might affect aphid abundance scores located in these areas and give a good idea of availability of potential invertebrate food for fledglings. However access to back gardens would have prevented gaining accurate results.

Further work

Figures and comments from local residents suggest that sparrows may be returning in smaller numbers. It is therefore imperative that more accurate survey counts are undertaken each year. Also, garden centres could do more work in promoting native species. It is still very apparent that ornamental shrubs are a popular buy, and this needs to change if we are to attract wild life into our gardens. Thankfully TV and Radio programmes are promoting this, as are local organisations such as Wildlife Trusts and Local Government. The theme of the Chelsea Flower Show this year was biodiversity, and one of the wildlife gardens recorded 3 species of bees, 14 species of insects and 4 species of birds. However travelling through most areas of Bristol it is apparent that the car takes precedence and many front gardens suffer loss of green space. No official research here has been done to record the impact.

However research has been done in the city of Sheffield (BUGS project) into recording types of gardens and habitats, relationships with native species and invertebrate populations. Understanding the composition and richness of garden floras will help evaluate the relationships between these floras and the wider environment. The composition and richness of vascular plant floras has been measured in Sheffield where 61 urban domestic gardens were measured for their content of native and non native species, the data of which can be compared with invertebrate numbers and its subsequent effect on wildlife, such as garden birds.

Kate Vincent, senior ecologist, has done large amounts of work in promoting nesting boxes to be incorporated into new build housing and turning buildings into bird friendly habitats, by trying to engage architects into thinking about designing modern buildings in order to protect wildlife such that ideally when new development is being designed biodiversity is given priority. (www.Kate Vincent.org – Provision for Birds in buildings).

CONCLUSION

Wild birds are commonly observed in private residential gardens in Great Britain. However such areas are private which makes research difficult. Data from surveys such as the BBS (Bristol Bird Survey) tend to be biased because only people who are more interested in wildlife than others tend to respond. From this small scale study, it is possible to see a correlation between the population of sparrows and the socio-economic status of an area. Increase of paving did not seem to make any difference to numbers. However sparrows do like native species in hedgerows and unattended scrubland or wasteland. There does seem to be a correlation between sparrows with the presence of Starlings but not with Gulls, Corvids and Pigeons. However the survey was not detailed enough to produce strong evidence that sparrows like species-rich gardens, although the trend is suggested and more detailed research is needed.

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Web sites

BTO Breeding Bird Survey http://www.bto.org/bbs/take_part/introduction.htm
RSPB: Birds in your garden at http://www.rspb.org.uk/wildlife/birdidentifier/
Avon Wildlife Trust: sparrow survey at http://www.wildsparrows.org.uk/
Bristol Biodiversity Action Plan on sparrows at http://www.bristol.gov.uk/ccm/content/Environment-Planning/Parks-and-open-spaces/wildlife-folder/bristol-biodiversity-action-plan-fsis/bristol-biodiversity-action-plan-house-sparrow.en
Kate Vincent: Investigating causes of the decline of the House Sparrow thesis at http://www.katevincent.org/thesis/HouseSparrows%20(final%20version).pdf
Kate Vincent: Provision for Birds in Buildings, presentation at http://www.katevincent.org/parentpage4.htm

Hiba

Tail of a Trail

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ONCE UPON A TIME, as all good tales begin, and not too long ago, a mature student embarked on a two year 'Wild Life Biology' Diploma Course at The School of Biological Sciences, Bristol University. This course offered challenging and stimulating modules with a dissertation as a final project.

So – it was in 2008 that I first began to think and look at lichens (never noticed before). I was asked by Mandy Leivers, Avon Gorge & Downs Biodiversity Education Officer, to provide documentation on the lichens of the Downs. This held great appeal, as I regularly walked my dog in this area. Also I felt it was important that my dissertation would be useful. One of my objectives was to provide a resource, perhaps in the form of a trail, as an introduction to lichen ecology for the general public.

Whilst working on this final assignment, my brother Derek, a clever research scientist, died unexpectedly. The dedication of my lichen work is for him, and his death gave me further motivation and inspiration to realise my ambitions and helped to nullify the sadness and grief.

So – the idea of a Trail was born, and necessities regarding finance and format had to be organised, and eventually the Trail was launched in January 2011. The project was a team effort. Mandy Leivers, was instrumental as the coordinator, having produced three other Downs Trails – Meadow, Bird and Tree. Finance was a priority and The British Lichen Society and Bristol Naturalists' Society generously promised funding. The Avon Gorge & Downs Wildlife Project provided the balance.

My part, having initiated the idea was to devise a route, identify the trees and the relevant corticolous lichens. This was indeed a treat as I am familiar with most of the trees and shrubs on the chosen area of the Downs. Mandy and I walked the route and some minor changes were made to avoid crossing roads to comply with health and safety issues and using a circular route which would 'map' neatly.

A bright, calm day was chosen for Denice Stout to take photographs. The results were amazing, surpassing all expectations with superb colours, forms and substrates.

David Hill enthusiastically walked the Trail offering advice on the route and the key features of the selected lichens. Later he edited the lichen data both for accuracy and to ensure that the information could easily be understood by the general public.

Having assembled the information, the leaflet could be designed and Clare from Dandi Creative was commissioned. She was experienced having worked with the other trails and was patient as draft after draft was revised. Finally after discussions and deliberations a final document and tree and lichen marker discs were ready to be printed. In total 3,000 leaflets were published and to date 1,000 have been circulated.

The Trail was publicised in various ways; leaflets as already mentioned, A4 posters, a press release, a promotional talk 'The Colourful World of Lichens' given by David Hill, and two Downs Lichen Walks led by myself. The response from the local people has been enthusiastic with 45 people attending David's talk and my walks fully booked. A display illustrating the features of the Trail, first shown at the AGM this year, was displayed in the local library promoting the circulation of over 100 leaflets to date.

The leaflet briefly outlines the characteristics of 'What is a Lichen?' and describes the three main thallus forms – crustose, foliose and fruticose. A plan of the route is shown identifying six 'stations' naming the associated lichens and their key features with detailed colour photographs. The most noticeable and pertinent trees and lichens were selected, namely –

1) Mature oak in an open aspect with the trunk and lower branches heavily encrusted with grey, green and yellow lichens - *Punctelia subrudecta*

2) Hawthorn with contorted twigs - *Xanthoria parietina, Physcia tenella*

3) Mature oak in a shaded habitat – *Flavoparmelia caperata, Physcia aipolia*

4) Blackthorn bushes – *Ramalina farinacea, Evernia prunastri*

5) Mature ash, lower branches at eye level – *Lecidella elaeochroma, Lecanora chlarotera*

6) Hawthorn, exposed aspect – *Ramalina fastiagata*

I have adapted The Trail for the two walks organised as part of Mandy's Events programme, in that more trees are observed, a longer route is walked and time allowed for questions, answers and opportunities at the end for 'advancement' suggestions. Having fired enthusiasm on the walk, an important aim of any programme is to maintain and continue interest. My 'advancement' information is low key and I look forward to a BLS professional package which can be offered to enthusiastic beginners.

Resulting from this interest and enthusiasm I have been invited to work with students on a Vocational Diploma Course based in the Education Centre at Bristol Zoo using ideas from 'Opal Air Survey'. Many thanks to Richard Brinklow from BLS who at my request sent ten packets of epiphytic macro-lichens found in an area of low pollution levels for the students to handle. They were fresh and in 'proper' herbarium packets with data to demonstrate good practice. I really appreciated this gesture as giving the students the opportunity to observe the real thing is invaluable.

Hopefully, the story will not end there but continue with more projects, walks and talks to demonstrate the fascination of lichens as a useful and unique resource.

Poa annua

BRISTOL MAMMAL REPORT 2010

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INTRODUCTION

The intention of this mammal report is to be a wide-ranging review of the records and studies of mammals in and around the Bristol area and to report on significant issues and events affecting British mammals in 2010. The former county of Avon covers an area of approximately 1300 square kilometres, and so the number of 1-km squares for which records have been received gives an indication of the abundance of each species. The more common species are likely to be under-recorded. Where given, all grid references are for the 100 km grid square ST. The differences between the years are likely to be due to changes in numbers and locations of recorders rather than changes in mammal abundance or distribution. Provided the submitter of a record gives permission, all records are submitted annually to the Bristol Regional Environment Records Centre (BRERC) (www.brerc.org.uk).

The sequence of Orders, Families Genera and Species now follows current thoughts on evolution and phylogeny (Harris and Yalden 2008).

Hedgehog numbers continue to cause concern with the third lowest road casualty count since recording first started in 1996 and equal second highest numbers of badger road casualties in the same period.

This year for the first time, a selection of maps from the National Biodiversity Network (www.nbn.org.uk) with data up to 2006, are shown. The maps are presented at one-km resolution as 'side-by-side' pairs with the vice county of North Somerset on the left and West Gloucestershire on the right. The maps show the value of submitting records to BNS and then on to BRERC and finally onto the NBN database; the Badger map in particular shows the boundary of the old county of Avon particularly clearly! Note that the West Gloucestershire map fits immediately to the north of the North Somereset one, and the river Avon is the boundary. The North Somerset map extends southwards well beyond the limits of the Bristol region.

Rodents: Order Rodentia

Grey squirrel *Sciurus carolinensis*

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	**2010**
1km squ	77	50	37	59	62	83	60	68	53	34	**30**

Records from JB, RLB. PC, CD, KG, HM, S&JP, JR, CT, DT, MT, MJT, DWa, JW.

The lowest number of 1-km squares recorded (likely to be simply that they are not reported). The majority of records are from gardens – particularly those where birds are fed.

Hazel dormouse *Muscardinus avellanarius*

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	**2010**
1km squ	?	0	1	1	0	0	5+	2	1	2	**2**

Records from HB, MB, KH, SN, BNS.

Hannah Broughton reported on her Dormouse box checks at Leigh Woods (5573 & 5574). There are now 70 nest boxes in place and Dormice appear to be much in evidence. The monthly counts were May 10; June 5; July 6; September 19; October 14; and November 14.

Dormice featured in the 'Urban Nature' section of the Evening Post on 4 December. Joe McSorley of the Avon Wildlife Trust reported on finding dormice hibernating in nest boxes at the Trust's Goblin Combe Nature Reserve. 31 individuals were found in boxes on the reserve in just one survey in 2009. Dormice have now been found in four of the Trusts' nature reserves.

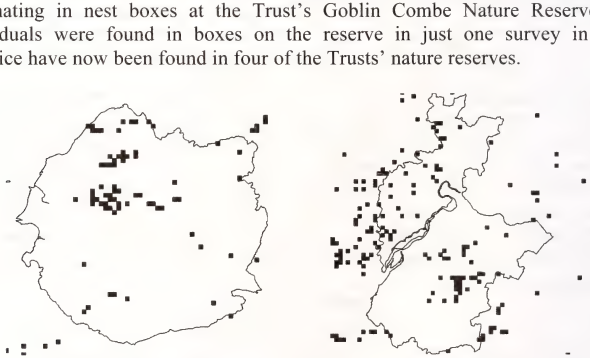

Figure 1. Hazel Dormouse distribution North Somerset and West Gloucestershire
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The distribution map clearly shows the limited distribution of Dormice in our area. The concentrations in the Cheddar and Cleeve/Kings Wood area are clearly shown in the North Somerset map with the Wetmoor/Lower Woods locality showing clearly in the West Gloucestershire map.

Bank vole ***Myodes glareolus***

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	**2010**
1 km squ	4	1	6	5	1	3	3	5	2	0	**1**

Record from JR.

The only reported sighting for the year was of one attempting to cross a road in Pilning – whether or not it succeeded was not confirmed.

Field vole ***Microtus agrestis***

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	**2010**
1 km squ	2	2	7	5	1	3	4	1	2	2	**1**

Record from JR.

Seen under bird feeders in a Pilning garden.

Water vole ***Arvicola aquatica***

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	**2010**
1 km squ	0	2	2	2	1	2	4	0	1	1	**0**

No records for the year.

A British Waterways survey of canals and rivers showed a doubling of the number of sightings of Water Voles in 2009 compared to 2008. Most of the 90 individuals were spotted on the Kennet and Avon Canal. The 2010 survey showed a further increase of 33%. Mink on the other hand showed a 36% decline from 2009 to 2010. (BBC Wildlife 28 (3) March 2010 and www.waterscape.com/wildlifesurvey).

Harvest mouse Micromys minutus

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	**2010**
1 km squ	0	1	0	0	0	1	1	0	0	0	**0**

No records for the year.

Wood mouse ***Apodemus sylvaticus***

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	**2010**
1 km squ	6	7	5	9	3	7	5	9	4	7	**7**

Records from GB, S&JP, JR, DT, MJT, GW, JW.

The majority of records were from under garden bird feeders or in houses!

Yellow-necked mouse Apodemus flavicollis

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	**2010**
1 km squ	0	0	1	0	0	0	0	0	0	0	**0**

No records for the year.

Small Mammals and Dry Stone Walls

John Dutton and Ben Welbourn reported on a study of small mammals and dry stone walls on the Ebworth National Trust estate in the Cotswolds (*Mammal Habitats* Mammal News Autumn 2010). Using *Longworth* live capture traps, they compared the small mammal numbers in intact and relict dry stone walls and between the bases and tops of the walls. Woodmice and Bank Voles were the most numerous followed by Common Shrews. Low numbers of Yellow-necked Mice, Water Shrew, Pygmy Shrew and a single Short-tailed Field Vole were also trapped. Significantly more individuals were trapped at the base of the walls but there was no difference between the intact and relict walls. The greater trapping success at the base of the walls suggests that it is the association between the wall and the adjacent habitat that is important.

House mouse *Mus domesticus*

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	**2010**
1 km squ	3	4	1	3	1	3	2	1	1	1	**0**

No records for the year.

Common rat *Rattus norvegicus*

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	**2010**
1 km squ	17	6+	13	9	9	7	6	8	5	7	**7**

Records from RA, HM, S&JP, JR, DT, GWa, JW.

Almost all records from private gardens.
'Rat catchers may lose out in cutbacks' (Evening Post 10 September). Bristol City Council is thinking of cutting the number of rat catchers in the city – at a time when the rat population shows a long-term trend of going up. The official number of 'rat infestations' quoted by the council are 3,193 in 2005/06, 3,817 in 2006/07, 4,924 in 2007/08, 4,778 in 2008/09 and 4,534 in 2009/10.

Rabbits and Hares: Order Lagomorpha

Rabbit *Oryctolagus cuniculus*

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	**2010**
1 km squ	105	19	36	52	68	76	48	23	36	50	**19**

Records from RLB, KG, S&JP, JR, DT, MT, GWa.

First record of juveniles was on 22 April in Pilning. A completely black juvenile rabbit was reported from Leyhill (6992).

Brown Hare ***Lepus europaeus***

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	**2010**
1 km squ	34	11	10	24	6	10	12	10	2	6	**2**

Records from DWa.

Only recorded in two 1-km squares this year, with single individuals at Corston (6764) in February and Villice Bay (CVL) (5560) (regularly Marc, April and June where one ran through shallow water when flushed.

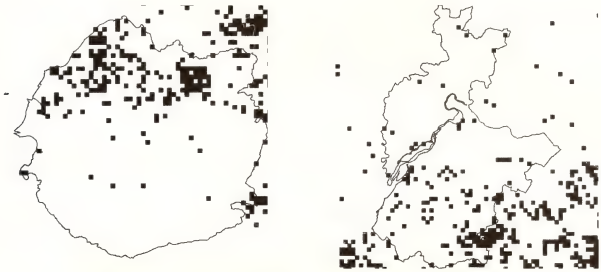

Figure 2 Brown Hare distribution North Somerset and West Gloucestershire
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Brown Hares appear to be fairly widely distributed in our region with apparent concentrations in the Dyrham Park/West Littleton, Compton Dando/Corston and Gordano Valley areas – probably due to being well visited areas by keen mammal/bird recorders.

Insectivores: Orders Erinaceomorpha and Soricomorpha

Hedgehog ***Erinaceus europaeus***

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	**2010**
1 km squ	97	38	45	26	26	39	14	24	17	16	**19**

Records from DMa, JR, DT, DWa, GWa.

There were 18 road casualty records in 2010, the third lowest since records were first systematically collected in 1996. Figure 4 shows the annual number of road deaths recorded since then.

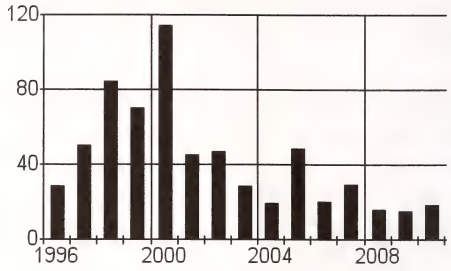


Figure 3. Number of Hedgehog Road Casualty Records 1996-2010

Figure 4 shows the cumulated monthly totals for the past fifteen years, peaking in July and August when young begin foraging for themselves.

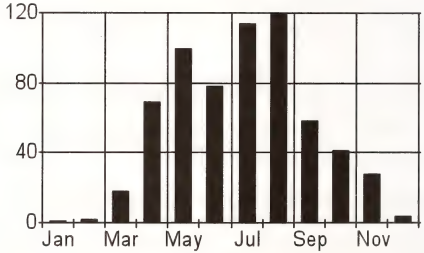
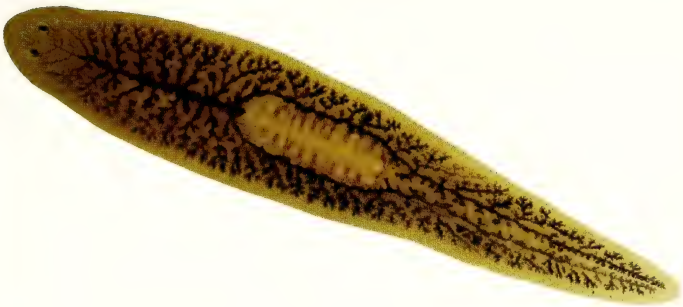


Figure 4 Hedgehog road casualties 1996-2010 by month

'Beryl's a real hedgehog hero' (Evening Post 31 August). Since 1996 Beryl Casey, known in Portishead as the Hedgehog Lady, has cared for more than a thousand hedgehogs. At any one time she looks after up to 40 hedgehogs, nursing them back to health before releasing them back into the wild.



Flatworm. R Muston

Knautia Macedonica. See P 32

Fortune's Holly Fern R Bland See p 28

Moth Mullein. R Bland

Cepea Nemoralis. R Muston

Weeping Silver Lime R Bland

Wych Elm seeds. R Bland

Paris Quadrifolia Weston Big Wood

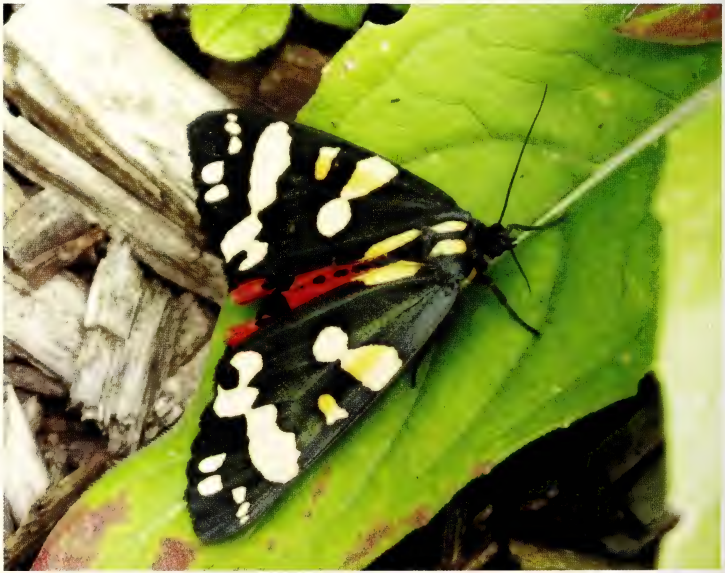
June 11th

August 13th

Oct 2
Horse Chestnut Leaf Miners at work

The last Huntingdon Elm on the Downs, July 2011, on its last legs

Rose Chafer. R Muston



Tiger Moth R Muston

Sweet Chestnut in Bristol with seven metre girth

Acanthus mollis in the wild, Avonmouth

Hogweed

Mole *Talpa europea*

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	**2010**
1 km squ	151	69	63	56	63	90	71	81	80	85	**53**

Records from RLB, PC, JR, DT, GWa.

The vast majority of records were of Mole hills, generally the only evidence that they are present in a particular area. A single record of an individual crossing the road at Belmont Hill (5170) in July.

Common Shrew ***Sorex araneus***

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	**2010**
1 km squ	1	3	4	5	2	6	6	3	2	2	**1**

Record from KG.

A individual seen alive in June and one found dead in September (both at Tickenham Ridge (4472).

Pygmy Shrew ***Sorex minutus***

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	**2010**
1 km squ	0	0	4	6	0	0	0	1	0	1	**0**

No records for the year.

Water Shrew ***Neomys fodiens***

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	**2010**
1 km squ	0	0	2	2	2	0	1	0	0	1	**0**

No records for the year.

Bats: Order Chiroptera

Greater Horseshoe Bat ***Rhinolophus ferrumequinum***

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	**2010**
1 km	0	5	0	1	1	0	1	0	0	1	**0**

No records for the year.

Figure 5. Greater Horseshoe Bat distribution in North Somerset and West Gloucestershire.

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The area around Brockley and King's Wood/Brockley Wood north to Clapton Moor and around Bath, well known strongholds for the endangered Greater Horseshoe Bat, show up very clearly.

Lesser Horseshoe Bat ***Rhinolophus hipposideros***

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	**2010**
1 km squ	3	0	9	4	0	7	0	1	0	2	**1**

Record from KG.

One live individual and one dead found in woodland 'cave' at Tickenham Ridge Nature Reserve (4472) on 13 April.

Whiskered Bat/Brandt's Bat ***Myotis mystacinus/brandtii***

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	**2010**
1 km squ	0	0	1	1	0	0	0	0	0	2	**0**

No records for the year.

Daubenton's Bat ***Myotis daubentoni***

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	**2010**
1 km squ	0	1	2	0	2	0	0	0	0	0	**0**

No records for the year.

Natterer's Bat *Myotis nattereri*

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	**2010**
1 km squ	3	1	3	0	1	0	0	0	0	1	**0**

No records for the year.

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	**2010**
1 km squ	0	0	1	1	0	0	1	0	0	1	**0**

Bechsteins Bat *Myotis bechsteinii*

No records for the year.

Leisler's Bat *Nyctalus leisleri*

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	**2010**
1 km squ	0	1	0	0	0	0	0	0	0	0	**0**

No records for the year.

Noctule *Nyctalus noctula*

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	**2010**
1 km squ	1	3	4	4	4	0	1	2	0	2	**0**

No records for the year.

Common Pipistrelle *Pipistrellus pipistrellus*, **Soprano Pipistrelle** *Pipistrellus pygmaeus* **and Pipistrelle sp.** *Pipistrellus sp.*

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	**2010**
1 km squ	3	4+	12	5	6	9	4	5	4	9+	**5**

Records from DMe, HM, MM, JR, DT, GW.

Bat detector records from gardens, parks and allotments from May to August from West End Nailsea (4569), Pilning (5585) and St Werburghs and Mina Road Parks (6074) and Ashley Hill allotments (6075) and (5974).

Nathusius' Pipistrelle *Pipistrellus nathusii*

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	**2010**
1 km squ	0	1	0	0	0	0	0	0	0	1	**0**

No records for the year.

Serotine *Eptesicus serotinus*

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	**2010**
1 km squ	0	0	2	2	0	1	1	1	0	1	**1**

Record from GWa.

One seen at Top Sutton (5859) in May.

Brown Long-Eared Bat *Plecotus auritus*

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	**2010**
1 km squ	0	0	1	1	0	0	0	2	1	3	**0**

No records for the year.

Bats in the news

'Bat hotel has first flying visit' (Evening Post 10 September). As mitigation for the demolition of an old farmhouse at Bristol Airport, a specially designed bat house was constructed. Weighing in at half a tonne and three metres in height, the 'luxury bat hotel' took two weeks to build. Twelve months on the first bats have already moved in.

New bat species

A new bat species was added to the list of Britain's native species list in 2010. The Alcathoe Bat *Myotis alcathoe* was discovered at two autumn swarming sites in Sussex and a further site in North Yorkshire by Professor John Altringham and colleagues at the University of Leeds. Its finding at sites 350km apart suggest that it is a resident species that has gone undetected because of its similarity to other small *Myotis* species (Wildlife Reports *British Wildlife 21* (5) June 2010).

Carnivores: Order Carnivora

Red Fox *Vulpes vulpes*

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	**2010**
1 km squares	71	35	39	48	38	47	43	27	24	36	**31**

Records from RA, JB, RLB, PC, CD, KG, SG, HM, JM, MM, TM, JP, S&JP, JR, DT, MT, MJT, MPT, DWa, GW, JW, RW.

'Judge lays down law on foxes after shoe attack' (Evening Post 31 July). A former judge warned homeowners to beware after a fox climbed into his home in Cotham Hill through an open sash window 30ft above the ground, via a garden wall. The fox chewed one of his leather shoes and left it in the garden, leaving behind a strong foxy smell in the house.

Badger *Meles meles*

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	**2010**
1 km squ	77	42	50	31	37	48	29	56	51	49	**55**

Records from the following RA, JB, RB, RLB, MJ, MM, S&JP, JR, DT, MT, MJT.

Fifteen years of Badger road casualty figures with 569 records to date show a large peak around March/April (peak breeding season) with perhaps an indication of a smaller peak in September (dispersal of young) (Fig 6). There are few records between November and January. This is the time of year when Badgers are at their least active with the pregnant females underground in their setts prior to giving birth to cubs between January and March.

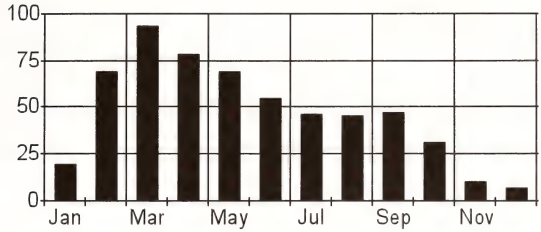

Figure 6. Number of Badger Road Casualty Records per month 1996-2010.

There appears to be an upward trend in the numbers of road casualty badgers from the mid 1990s to the present, with a particular peak in 1999, 2000 and 2001 (fig 7).

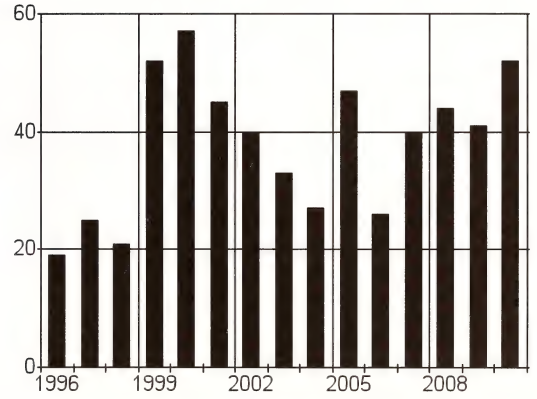

Figure 7 Road casualty badgers 1996-2010.

Since records of road casualty Badgers were collected on a regular basis (from 1996), a number of 'hot-spots' are apparent:

1–km square	Number of road casualty Badgers	Location/Notes
4169	13	M5 near Clevedon (the overbridge at ST414699 appears to be particularly hazardous)
4170	5	M5 Clevedon (junction20)
4271	10	M5 near Clevedon Court
4369	5	Minor road across Nailsea and Kenn Moors
4971	7	B3130 Wraxall
4972	6	B3128 Wraxall
5070	5	B3130 Belmont
5072	7	B3128 Wraxall
5075	6	A369 Gordano
5269	16	A370 Cambridge Batch (Long Ashton Bypass)
5369	14	A370 Barrow Wood (Long Ashton Bypass)
5471	5	B3128 at Ashton Court
5484	11	A403/M49 Severn Beach
5563	5	B3130 at Littleton
5570	5	A370 Long Ashton by-pass
5571	5	A370/B3128 Long Ashton (bypass)/Bower Ashton
5585	7	Pilning
5662	6	B3114 Chew Stoke to Chew Magna
6469	7	A4 Keynsham Bypass
A further 12 1-km squares had 4 road casualty Badgers, 16 1-km squares had 3 road casualty badgers, 60 1-km squares had 2 road casualty badgers and 151 1-km squares had 1 road casualty badger.		

Table 1. Numbers of road casualty Badgers per 1-km square (1996-2010)

The results give an indication of the most hazardous places for Badgers (and for road users) but are likely to be biased towards the routes driven by the regular badger road casualty recorders. This is particularly true of the roads around Nailsea, the M5 and the A370 where your county mammal recorder lives. Badgers occupying the setts in the embankments of the M5 minor road over-bridges between Clevedon Court and Clevedon Craft Centre (4270) and the Craft Centre and the Hand Stadium (ST4169) have a particularly hard time with 23 of them being run over since 1996. A further 5 were run over in the adjacent 1-km square 4170!

Which were the most dangerous roads for Badgers in 2010?

Road Name	*Location (in 'Avon')*	*2004-9*	***2010***	*Total*
M32	Hambrook to centre of Bristol	1		1
M4	Tormarton to Second Severn Crossing	3		3
M49	Severn Beach to Avonmouth	1		1
M5	Falfield to Loxton	10	**2**	12
M48	M4 Awkley to Aust	3		3
A4	Avonmouth to Batheaston	4	**5**	9
A36	Bath to Hinton Charterhouse	2		2
A37	Temple Meads to Farrington Gurney	5	**1**	6
A38	Falfield to Churchill	8	**2**	10
A39	Corston to Hallatrow	1		1
A362	Farrington Gurney to Radstock	4	**1**	5
A368	Banwell to Marksbury	6	**3**	9
A369	Bower Ashton to Portishead	6	**1**	7
A370	Ashton Gate to East Brent	31	**6**	37
A46	Starveall to Bathampton	2	**1**	3
Old A46	Lambridge (Bath)	1		1
A403	Avonmouth to Aust	14	**5**	19
A420	Bristol to Marshfield	2	**1**	3
A4018	Bristol Centre to M5 Junction 17	1		1
A4174	Hick's Gate to Filton	1	**1**	2
B3110	Bath to Hinton Charterhouse	1	**1**	2
B3114	Chew Magna to Chewton Mendip	7		7
B3124	Clevedon to Portishead	2		2
B3128	Bower Ashton to Stone-edge-batch	10		10
B3129	Abbots Leigh to Flax Bourton	2	**1**	3
B3130	Pensford to Clevedon	19	**5**	24
B3133	Clevedon to Lower Langford	1		1
B3134	Chew Magna to East Harptree	1		1
B4055	Shirehampton to Pilning	6	**2**	8
B4058	Eastville to Charfield	1		1
B4461	Aust to Alveston	1		1
Unspecified	Chew Valley area	9		9
Minor roads	Various locations	59	**14**	73

Table 2. Numbers of road casualty badgers on roads in the former county of Avon in 2004-10.

The most dangerous road overall continues to be the A370 (Ashton Gate to East Brent). 37 Badgers have now been run over on this road in the seven years 2004-10.
Jeff Rawlinson reported seeing badgers regularly throughout the year in his Pilning garden (5585). Largest count was on four adults – seen on several occasions. First report of young was when two adults were seen with a cub on 11 June.
An erythristic (gingery) colour form badger was found dead on the road at Winford (5365) in March.

Badgers in the press
'Student under investigation after badger shot with spear' (Evening Post 1 July). A law student at the University of Bristol is alleged to have shot a badger with a spear gun in the grounds of Baydock Hall on 6 June. The incident was being investigated by the police and the RSPCA.

Figure 8 Badger distribution in North Somerset and West Gloucestershire.
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Not surprisingly badgers are found throughout the area with only a few 'gaps' where they have not been recorded – probably areas where there are few road and hence few road casualty records. The border between the old county of Avon and Somerset is particularly obvious – a clear indication of the success of BRERC at data input and the potential dangers of under recording.

Otter *Lutra lutra*

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	**2010**
1 km squ	24	2+	25	19+	28+	36+	28+	25+	1+	3+	**2**

Record from RB, PO.

Male found dead on the B3128/Portbury Lane (5072) on 19 January. One seen mid afternoon on 19 November about 100m upstream from Weston Lock, Bath on the Bristol Avon (7364).

Figure 9 Otter distribution© Crown copyright and database rights 2011 Ordnance Survey [100017955]

The NBN distribution shows clearly the River Frome and Boyd in S Glouc s and the rivers Chew, Cam and Wellow in North Somerset as well as the Gordano Valley and Congresbury Yeo.

Stoat *Mustela ermina*

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	**2010**
1 km squ	10	4	3	1	0	4	4	2	3	3	**3**

Records from KG, DWa, GWa.

Individual animals seen at Westerleigh (7968), Tickenham Ridge Nature Reserve (4472) and Heron's Green (5559).

Weasel *Mustela nivalis*

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	**2010**
1 km squ	10	3	7	6	4	7	6	3	4	2	**2**

Records from AB, MC, JM, LW.

Individual animals at Weston Sewage Treatment Works (3156) and Portishead (4677).

European Polecat *Mustela putorius*

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	**2010**
1 km squ	?	2	2	0	0	1	1	2	1	3	**1**

Record from GWa.

One road casualty found at Brassnocker Hill, Bath (7763) on 9 April.

American Mink *Mustela vison*

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	**2010**
1km sq	3	0	2	0	1	2	3	3	0	0	**0**

No records for the year.

Seals: Order Pinnepedia

Grey Seal *Halichoerus grypus*

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	**2010**
1 km squ	3	5+	0	0	1?	0	0	2	0	0	**2**

Records from CM, JR.

One – two individuals seen at Steep Holm in April, August and October. One seen near the road bridge over the River Wye in Chepstow (5394) in May (technically on the Gloucestershire/Monmouthshire border but only about 2½ km from South Gloucestershire).

Ungulates: Orders Perissodactyla and Artiodactyla

Reeve's Muntjac *Muntiacus reevesi*

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	**2010**
1 km squ		0	?1	1	3	2	1	2	0	3	**1**

Records from CM.

All sightings from Steep Holm (2260) – 2 seen in April, 2 in August and 3 in October.

Red Deer *Cervus elaphus*

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	**2010**
1 km squ	1	0	1	0	0	0	0	0	0	0	**0**

No records for the year outside deer parks and deer farms.

Fallow Deer *Dama dama*

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	**2010**
1 km squ	0	0	0	1	1	0	0	0	0	0	**0**

No records for the year outside deer parks.

European Roe Deer *Capreolus capreolus*

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	**2010**
1 km squ	51	20+	27	33	26	33	36	35	31	34	**23**

Records from JB, RLB, KG, JM, H&SP, S&JP, DWa, GWa.

Groups of three or more Roe Deer seen at the following locations:-

Portishead (44766) - buck, does and two '09 fawns – March.
Tickenham Ridge Reserve (4472) - doe and twin fawns, one doe and fawn and one buck – summer
Marshfield (7774) – three individuals – July.
Woodford Hill (5661) – five animals – April.
Wick Green (5758) – buck and two does – April
Stratford Bay (5658) – three grazing in field.
M5 (junction 17) (5680) – three grazing in field close to motorway – April.

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Figure 10. Roe Deer distribution in North Somerset and West Gloucestershire.
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Roe Deer are widely distributed throughout the region with the only distinct gap being in the west of North Somerset around between Weston-super-Mare and Clevedon.

Whales, dolphins and porpoises: Order Cetacea

Harbour Porpoise *Phocoena phocoena*

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	**2010**
1 km squ	0	0	0	0	1	0	1	1	0	1	**1**

Record from CM.

A small number seen off Steep Holm on 28 August but positive identification not certain.

European Wild Boar *Sus scrofa*

'Cull needed to prevent wild boar population 'explosion'' (Western Daily Press 2 January). Forestry Commission rangers in the Forest of Dean are planning to start a cull of the Forest's wild boar population with the aim of maintaining an average population of about 100 animals. The current population is thought to be in the region of 90-150 individuals. The decision to undertake a cull follows a series of incidents including boar damage to football pitches in Ruspidge and an incident at Ruardean Primary School when a boar had to be shot dead after it became aggressive.

Big Cats

Reports of large beast/cats/panthers/leopards/pumas etc roaming the countryside attacking livestock continue to circulate in the press but as yet there have been no confirmed sightings.

Red-necked Wallaby *Macropus rufogriseus*

'Missing wallaby is found dead' (Evening Post 12 October). Bruce, one of a pair of wallabies that escaped from a garden in Long Ashton on 2 October was found dead at Keed's Lane.

ACKNOWLEDGEMENTS

My thanks to all those who provided records and information for this year's report:

Rosemary Atkins (RA), Richard L Bland (RLB), Bristol Naturalists' Members (BNS), Alan Britton (AB), Hannah Broughton (HB), Matthew Broughton (MB), Gill Brown (GB), Rob Buck (RB), John F Burton (JB), Paul Chadwick (PC), Mike Cop (MC), Claire Dowding (CD), Keith Giles (KG), Simon Groves (SG), Kate Henson (KH), Mrs Jaggard (MJ), Dennis Marsh (DMa), John Martin (JM), Chris Maslen (CM), Mo McManus (MM), Harry McPhillimy (HM), Dan Merrett (DMe), Tess Minns (TM), Sarah Nicholas (SN), Pernille Olsen (PO), John Phillips (JP), Helen & Sarah Phipps (H&SP), Sue & John Prince (S&JP), Morf Pullin, Jeff Rawlinson (JR), Chris Thirlway (CT), David Trump (DT), Mary P Trump (MPT), Mary J Trump (MJT), Matthew Trump (MT), Giles Wagstaff (GWa), Jan Walters (JW), David Warden (DWa), Guy Watson (GW), Larry Wheatland (LW), David Wilcox (DWi), Ruth Williams (RW).)

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First Flowering dates

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In 2007 I began to collect the first flowering dates for all the common species of flowering plant, not including grasses, in the region. First flowering dates are affected by temperature, and hence will alter as the climate alters. Reference works, including White, usually refer simply to the dates during which the plant may be found in flower, but, precisely because of the differences between different years, this is always stated in broad terms, usually by month. Some plants have very short flowering periods, which can be as brief as a week, and others are in flower in every week of the year, but the average length of the flowering season for all species varies with the weather conditions, and this will affect the total seed production, and thus, for annuals at least, the likely population size the following year. The structure of the flora of any site varies substantially from year to year depending upon the fierce competition between species, and it follows that the nature of the flora of any site or region will alter over time as the climate changes. Climate is very far from being the only factor at work, of course, but it is one over which humanity has no control, and which is very fundamental to the floral structure of any region.

Since the nature of climate change is a matter of controversy and concern I felt it would be useful in future to have a yardstick by which floral change could be measured, and so I set out to establish the earliest date on which all common species could be found in flower in the region. To seek to eliminate chance I have tried to visit as many varied sites as regularly as possible, and, over five years, have established what I believe is a fairly reliable first date for 530 species. In the Flora of the Bristol region, 2000, there are 542 flowering species that occur in more than 1% of the regions 1-km squares, so that I have established dates for all but the rarest plants. The habitats I visit least often are ponds and coastal species, and I also have very few orchid records.

Chart 1 shows, as bars, the number of species that come into flower in each ten-day period in the course of a year. The total number of species is 530. The number of species rises rapidly through April to peak in the first week of May, then falls back, and there is a second peak in mid-June, followed by a very rapid fall off. 54% of species come into flower by May 10th and three quarters by June 10th.

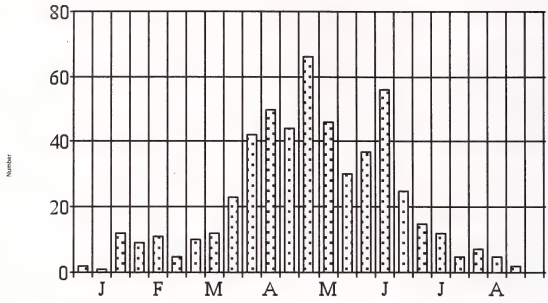

Chart 1 The number of species coming into flower in each ten-day period, 2007-2011

However the pattern varies in each year, depending on the weather, and Chart 2 shows the pattern for 2010, which was a late spring. It is based on 413 species. Because of the cold January virtually no species came into flower before the middle of March, there was a peak in mid-April and another in the last ten days of May.

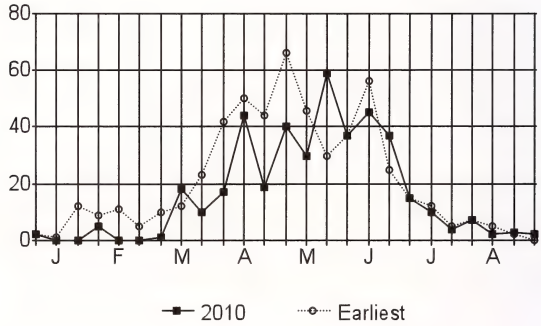

Chart 2 The number of species coming into flower in each ten day period in 2010 compared with the figures for the earliest date over five years.

Because the number of species recorded in 2010 was fewer than the overall total, the best way to see the difference that a late spring made is to compare the cumulative percentage of the total number of species, and this is shown in Chart 3. The figure of 50% of all species was not reached in 2010 until twenty days later than the "earliest ever" graph, though 75% was reached just five days late. Perhaps the real significance is the demonstration that a cold January influences the whole pattern up to mid-summer.

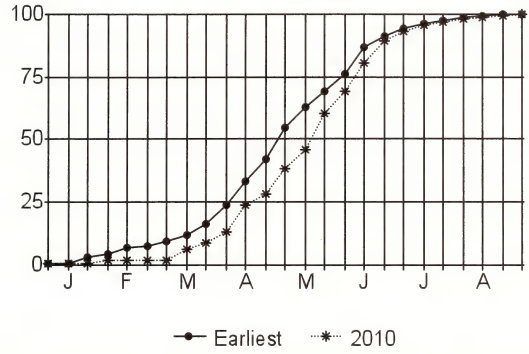

Chart 3 Cumulative percentageof total species, comparing 2010 with the Earliest ever records.

In 1900 the thirty year average annual temperature had fallen to 13.19ºC, and by 1950 it had risen to a peak of 14.05ºC. Since then it fell to a minimum of 13.57ºC in 1993, and today is back to 13.94ºC. These long-term swings may seem small, but they can have a considerable impact on the structure of the flora, which we need both to monitor and to understand.

BRISTOL & DISTRICT INVERTEBRATE REPORT, 2010

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INTRODUCTION

After what seems like very many years of mild winters and with each winter increasing reports of insects of various species active throughout those winter months, 2010 proved to be somewhat different. A cold wintry spell with lying snow in early January at the start of the year was complemented by an even longer period of very low temperatures and snow at the tail end of the year in December. Cold winters are thought in general to be beneficial for native species (ensuring the over wintering stage is not truncated which may result in the insects becoming active when nectar sources might not be available) but potentially bad news for species which seem to have been increasing their range northwards in recent years (not adapted to survive low temperatures). Consequently, there was speculation that the cold January might impact on our insect fauna. As it transpired, there was little evidence of native species doing well nor of recent arrivals to our region suffering either. Perhaps the combination of a cold start and end to 2010 might resulting such an impact on species during 2011?

As it was, 2010 was a fairly quiet year. Immigration of insects to our region (and indeed across Britain) was very low with hardly any of the usual butterflies seen (eg Clouded Yellow) and numbers of the regular moths (eg Silver Y) down on an average year. Similarly there were no reports of other immigrants such as some of the dragonfly species we have almost come to expect recently. One exception to this dearth of immigrants was the arrival of the striking pyralid moth *Diaphanus perspectalis,* with an individual appearing in the autumn in a Bristol moth trap, coinciding with favourable winds from the Netherlands where this Asian native has now has become established.

With regard to our resident species, there were anecdotal suggestions that the Small Tortoiseshell butterfly was recovering from the very low numbers of recent years but whether that was true and if so whether it might be related to a decline in the population of the recent arrival of a parasitoid fly from Europe (*Sturmia bella*) was impossible to tell from the information received.

One endemic species which did seem to be in much higher numbers that usual was the Silver-washed Fritillary butterfly and the Invertebrate Section's field meeting to Lower Woods, Wickwar on 10 July 2010 was witness to that with very good numbers on the wing. The amazing increase in the distribution and abundance of the Scarlet Tiger moth has continued, so much so, that a red moth flying in the day in Bristol is now more likely to be that species than the Cinnabar. Otherwise there was a sprinkling of interesting records, as with last year, the Bioblitz event generating several new sightings.

Across the region and indeed much of southern England, small ermine moths (*Yponomeuta* species) were very noticeable with larval webs reaching considerable size and defoliating many shrubs. Similarly the numbers of the Horse Chestnut leaf Miner *Cameraria ohridella* (Ragonot) were very great locally and across England. Several recently established species seemed to continue to consolidate their populations, most noticeably the Harlequin Ladybird and the more recently arrived Western Conifer Seed Bug.

One of the more unusual sightings was of an Atlas Moth *Attacus atlas* on the wall of a house in February. One wonders how many such creatures, purchased as larvae or pupae from livestock suppliers, must be let out into the British countryside to die a long way from home.

My thanks to all who have submitted records directly to the Society (particularly to Robert Cropper, Paul Chadwick, Keith Giles, Jon Mortin, Andy Pym, Jane Cole, Mandy Lievers, Mike Williams, John Martin, Richard Bland, Richard Mielcarek, David Agassiz, Mike Bailey, Paul Bowyer, Neale Jordan-Mellersh, Ann Wookey, Roger Symes, Glenda Orledge, Ted Poulson, Nigel Milbourne, Martin Evans, Robert Angles, Alan Bone, Bob Fleetwood, Chris Iles, Andrew Duff, Dave Gibbs, Tony Cotterell, Peter Noyle, Rhian Rowson and John Burton) the Bristol Regional Environmental Records Centre (BRERC), Clevedon Moth Group, Bristol & District Moth Group and to the Bristol Wildlife E-group. The importance of receiving, not just the records picked out here, but those of perhaps less noteworthy species cannot be understated in terms of monitoring the ever changing status of the invertebrate fauna.

Scientific nomenclature follows that used by the National Biodiversity Network website (www.nbn.org.uk).

Addendum to 2009 report

When Environmental Impact Assessments are carried out, using paid professional entomologists, on sites potentially being the site of building and development, the richness of invertebrate assemblages within our area can be revealed. One such survey on a small site at Avonmouth (ST 58, vice-county 34, one visit in May and one in July 2009) produced three Red Data Book and 16 nationally scarce insects from a total of 460 species recorded. Of these, 15 were associated with wetland habitat. It is well known that the Water Vole has managed to remain in our region (with a little bit of help) on the rhynes of the Avonmouth area, we should also recognise how rich these locations can be for wildlife in general including sites which others may regard as wasteland or 'brown field' and not worthy of preservation. The species recorded on this survey included:

Coleoptera: *Graptodytes bilineatus* (Sterm)

Adonis Ladybird *Hippodamia variegata* (Goeze)

Diptera: Odontomyia ornata *(Meigen)*

Campiglossa malaris (Séguy)

A full species list has been deposited with the Bristol Regional Environmental Records Centre (BRERC).

Species of note in 2010

INSECTA

Orthoptera (grasshoppers and crickets)

Stripe-winged Grasshopper *Stenobothrus lineatus* (Panz.) Brown's Folly, Bathford Hill, Bath (vc 34) ST793 662 8 August 2010 Robert Cropper, stridulating in good numbers.

Rufous Grasshoppper *Gomphocerippus rufus* (L.) Portishead Down, North Somerset (vc 6) ST459 755 7 September 201 Robert Cropper. First found here in 1977.

Southern Oak Bush-cricket *Meconema meridionale* (Costa) Gloucester and Winchester Roads, Burnham-on-Sea, Somerset (vc 6) ST311 494 6 September 2010 Robert Cropper, apparently increasing with several ovipositing females noted. Abingdon Street, Burnham-on-Sea, Somerset (vc 6) ST305 488 4 November 2010 Robert Cropper, a male, almost a kilometre from original site.

Roesel's Bush-cricket *Metrioptera roeselii* (Hagenbach) Newton St Loe, Bath ST702 653 (vc 6) 2010 Mike Williams. Bath Racecourse (vc 6) ST7 6 2010 Mike Williams. Bannerdown, Bath (vc34) ST792 687 & ST793 688 8 August 2010 Robert Cropper. Signs that this recent colonist is starting to expand its range locally. One to look out for as no doubt other colonies will appear in coming years.

Great Green Bush-cricket *Tettigonia viridissima* Linnaeus Westbury Beacon, Somerset (vc 6) ST50 50 4 September 2010 Robert Cropper, one, possibly two, stridulating in scrub near road.

Hemiptera (true bugs)

Western Conifer Seed Bug *Leptoglossus occidentalis* Heidemann Clevedon, North Somerset (vc 6) ST41 72 16 September 2010 Ann Wookey, det. Ray Barnett, several seen. Abbots Leigh, North Somerset (vc 6) ST5 7 3 January 2011 John Sparks, det. Ray Barnett, one photographed in house. Filton, Bristol (vc 34) ST60 79 13 October 2010 Andy Pym. Bath University (vc 34) ST7 6 autumn 2010 Glenda Orledge. Stockwood, South Bristol (vc 6) ST6 6 autumn 2010 Ted Poulson, det. Ray Barnett. Bitton, South Gloucestershire (vc 34) ST6 6 January 2011 Mike Williams. Apparently this new invader is now well established in our region. It attracts comment on account of its large size and appearance which is unlike any other common British bug.

Corizus hyoscyami (L.) Kilmersdon, Somerset (vc 6) ST699 525 19 September 2010 Robert Cropper, one in rough grassland. This species seems to be still on the increase and appearing a considerable distance from its coastal haunts.

Bat Bug *Cimex pipistrelli* Jenyns Blagdon Lake, Bath & NE Somerset (vc 6) ST5 6 October 2010 Nigel Milbourne. Several found in bat boxes being inspected by the local bat group. A very poorly recorded species, not really surprisingly given its habitat, nationally let alone locally – this is probably the first record for the Bristol region. Individuals found in bat box used by Natterer's Bat.

Lepidoptera (butterflies)

Clouded Yellow *Colias croceus* (Geoff.) Clevedon, North Somerset (vc 6) ST41 72 30 August 2010 Roger Symes. A rare immigrant in 2010.

Small Blue *Cupido minimus* (Fues.) The Gully, Avon Gorge, Bristol (vc 34) ST564 746 July 2010 Mandy Lievers. One of the few known sites in the Bristol region.

Chalkhill Blue *Lysandra coridon* (Poda) The Gully, Avon Gorge, Bristol (vc 34) ST564 746 July 2010 Mandy Lievers and 11 July 2010 Jon Mortin. Brean Down, Somerset (vc 6) ST28 58 and ST29 58 28 August 2010 Robert Cropper, several seen.

Lepidoptera (micro-moths)

Cosmopterix pulchrimella Chambers Portishead, North Somerset (vc 6) ST4 7 10 October 2010 David Agassiz. A species only recently discovered on the Channels Islands and subsequently on the British mainland. First record for vice-county 6, leaf mines in *Parietaria.*

Mirificarma mulinella (Zell.) Fishponds, Bristol (vc 34) ST63 74 28 August 2010 Neale Jordan-Mellersh. Very few records from our region of this species of gelechiid moth.

Pammene argyrana (Hb.) Blaise Estate, Bristol (vc 34) ST558 785 21 May 2010 Ray Barnett. One caught at light trap as part of the Bristol 'BioBlitz', not recorded in the Bristol region since the 19thC.

Cydia servillana (Dup.) Fishponds, Bristol (vc 34) ST63 74 22 May 2010 Neale Jordan-Mellersh . A species for which the only previous record in the area that I am aware of is one from 1985 at Sand Point (Martin Evans).

Diaphanus perspectalis (Walker) Stoke Bishop, Bristol (vc 34) ST55 75 8 October 2010 Martin Evans. First record from our region and only recorded a handful of times previously in the British Isles. A striking species, native to Asia but now established in the Netherlands, a potential pest of Box trees.

Hornet moth *Sesia apiformis* (Cl.) Milton Road Cemetery, Weston-super-Mare, North Somerset (vc 6) ST32 61 16 August 2010 Robert Angles. The first confirmed record since the 19th C was in 2009 on the Bath University campus. This current record suggests it is present elsewhere within our region although very scarce or at least very difficult to find.

Small Eggar *Eriogaster lanestris* (L.) Shapwick Heath NNR, Somerset (vc 6) ST447 397 5 June 2010 Robert Cropper, larval web of mature larvae on Hawthorn bush.

Argent and Sable *Rheumaptera hastata hastata* (L.) Canada Farm, Shapwick Heath, Somerset (vc 6) ST417 410 31 May 2010 Robert Cropper, seven counted in flight.

Narrow-bordered Bee Hawk-moth *Hemaris tityus* (L.) South of Bristol (vc 6) ST5 6 5 June 2010 Nigel Milbourne, Alan Bone & Ray Barnett. Several seen nectaring at trefoils. Subsequently also reported from a second site in the general vicinity by another recorder.

Brown-tail *Euproctis chrysorrhoea* (L.) Sand Point, Weston-super-Mare, North Somerset (vc 6) ST330 659 28 June 2010 Paul Bowyer. Very localised in the region.

Jersey Tiger *Euplagia quadripunctaria* (Poda) Weston-super-Mare, North Somerset (vc 6) ST32 61 21 August 2010 David Agassiz, one adult at light. Having been firmly established in south Devon since the mid-19th C this moth has now started to be reported from several sites across southern England suggesting a limit imposed by climate has now been lifted.

Crescent Dart *Agrotis trux* (Hb.) ssp. *lunigera* Steph. Clevedon, North Somerset (vc 6) ST4 7 30 October 2010 Bob Fleetwood. An unusual autumn record of this summer species which is restricted to our coastline (also recorded at Sand Point, Weston-super-Mare, North Somerset (vc 6) ST330 659 25 June 2010 Bristol & District Moth Group and again on 28 June 2010 Paul Bowyer, a more usual flight time).

Sand Dart *Agrotis ripae* (Hb.) Sand Bay, North Somerset (vc 6) ST3 6 28 June 2010 Paul Bowyer, 50 recorded. A coastal speciality.

White Colon *Sideridis albicolon* (Hb.) Sand Bay, North Somerset (vc 6) ST3 6 2010 Paul Bowyer. A coastal speciality not seen in the region since 1962.

Glaucous Shears *Papestra biren* (Goeze) Timsbury, Bath & NE Somerset (vc 6) ST659 587 25 May 2010 Mike Bailey. The first record of this species in the region for at least 40 years, as a moorland species, presumably a wandering individual.

Small Ranunculus *Hecatera dysodea* (D. & S.) Fishponds, Bristol (vc 34) ST63 74 4 September 2010 Neale Jordan-Mellersh. The adult moth photographed at light was a surprise as the usual flight time is June to early August. Charlotte Street car park, Bath (vc 34) ST74 65 9 September 2010 Chris Iles, larvae feeding on Prickly Lettuce. Westbury-on-Trym, Bristol (vc 34) ST575 783 2010 John Martin larvae on Prickly Lettuce. Weston-super-Mare, North Somerset (vc 6) ST32 61 20 August 2010 David Agassiz, adult at light.

Common Quaker *Orthosia cerasi* (Fabr.) Clevedon, North Somerset (vc 6) ST4 7 30 October 2010 Bob Fleetwood. An unusual autumn record of this spring species.

Double-line *Mythimna turca* (L.) Clevedon Weston-super-Mare, North Somerset (vc 6) ST4 7 2010 Clevedon Moth Group. Again reported from Clevedon were it has been seen for a few years now, representing a recent re-colonisation of the Bristol region.

Shore Wainscot *Mythimna litoralis* (Curt.) Sand Bay, North Somerset (vc 6) ST3 6 28 June 2010 Paul Bowyer. A coastal speciality.

L-album Wainscot *Mythimna l-album* (L.) Sand Point, North Somerset (vc 6) ST330 659 25 June 2010 Bristol & District Moth Group. First record for the Bristol region. Later found to be well established as recorded again by Paul Bowyer at the same site on 28 June 2010.

Coleoptera (beetles)

Carabus monilis Fabricius Field of wheat, Burnett, Bath (vc 6) ST669 664 July 2010 Mike Williams, one in a pitfall trap, first Somerset record since 1993 (Nationally Notable Nb).

Staphylinus erythropterus Linnaeus Chew Valley School, Bath & NE Somerset (vc 6) ST567 623 3 September 2010 Jon Mortin, one photographed. Only the 2nd record in the BRERC database, few records across southern England.

Anthacomus rufus (Herbst) Berrow, Somerset (vc 6) ST29 51 31 July 2010 Robert Cropper, common along landward margin of dune marsh. A very localised species in England.

Eyed Ladybird *Anatis ocellata* (Linnaeus) Goodeve Park, Sneyd Park, Bristol (vc 34) ST558 751 22 May 2010 Jon Mortin, one adult photographed. Only the third record held on the BRERC database.

Cryptophagus acutangulus Gyllenhal Red Lodge Museum, Park Row, Bristol (vc 34) ST585 731 February 2010 Andrew Duff, one on 'sticky' trap. This tiny species was recorded from a pest trap set at Red Lodge and passed to Andrew Duff by Ray Barnett. Very few records on the National Biodiversity Network database.

Corticaria inconspicua Wollaston Red Lodge museum, Park Row, Bristol (vc 34) ST585 731 February 2010 Andrew Duff, one on 'sticky' trap.. This tiny species was recorded from a pest trap set at Red Lodge and passed to Andrew Duff by Ray Barnett. Thought to be the first record for vice county 34 West Gloucestershire and nationally very few records..

Agapanthia villosoviridescens *(DeGeer)* Old London Road Nature Reserve, Wotton-under-Edge, Gloucestershire (vc 34) ST755 942 20 June 2010 Robert Cropper, one found. This is primarily a species of the Midlands and eastern England and this record must represent one of its most south westerly sites..

Orchesia undulata Kraatz Blaise Estate, Bristol (vc 34) ST561 785 21 May 2010 (Bioblitz event) Ray Barnett, one swept. A dead wood associated species.

Hypulus quercinus (Quensel) Blaise Estate, Bristol (vc 34) ST561 785 21 May 2010 (Bioblitz event) Ray Barnett, one swept (RDB2). A very rare species of ancient woods and veteran trees where the larvae are associated with rotting oak. Only known previous records from the Bristol region are from Somerset in the 19th C and from a site on the Cotswolds in the 1990s.
Magdalis cerai (L.) Catcott Heath, Somerset (vc 6) ST40 41 29 May 2010 Robert Cropper, one from Hawthorn. A very scarce (Nationally Notable Nb) species of weevil with very few records for Somerset.

Hypera zoilus (Scop.) Gloucester Road, Bishopston, Bristol (vc 34) ST591 755 26 June 2010 Jon Mortin, one photographed. First record for the Bristol region and probably the most south westerly record for the British Isles.

Hymenoptera (bees, wasps and ants)

Temnothorax nylanderi (Foerster) The Gully, Avon Gorge, Bristol (vc 34) ST563 746 12 September 2010 Jon Mortin. One of the two sites known locally for this species.

Gorytes laticinctus (Lepeletier) Berrow, Somerset (vc 6) ST29 51 3 July 2010 Robert Cropper, female from the foredunes. A nationally very localised species.

Colletes hederae Schmidt & Westrich Uphil, Weston-super-Mare, North Somerset (vc 6) ST 316 580 2010 Robert Cropper, colony of 80-100 burrows on a SW-facing slope, many bees foraging on ivy nearby and on Walborough Hill. This recent colonist would appear to have become well established.

Bombus hypnorum (Linnaeus) Canada Farm, Shapwick Heath, Somerset (vc 6) ST420 406 31 May 2010 Robert Cropper, a few workers at Common Comfrey. Brightstowe Road, Burnham-on-Sea, Somerset (vc 6) 21 June 2010 Robert Cropper, nest in roof of garden shed. Max Meadow, Winscombe, North Somerset (vc 6) ST407 574 24 June 2010 Robert Cropper, worker visiting Marsh Thistle. Mangotsfield, Bristol (vc 34) ST 658 756 28 March 2010 Pam Gooding, one seen. Weston Big Wood, North Somerset (vc 6) ST456 750 15 June 2010 Michael Pocock, one seen. Thornbury, South Glos. (vc 34) August 2010 Rosemary Burton det. Rhian Rowson.

Diptera (true flies)

Bombylius discolor Mikan Walborough Hill, Uphill, Weston-super-Mare, North Somerset (vc 6) ST315 578 17 April 2010 Robert Cropper, female ovipositing within colony of *Andrena flavipes* Panzer in quarry.

Villa modesta (Meigen) Sand Bay, North Somerset (vc 6) ST3 6 22 August 2010 Dave Gibbs. A localised Beefly of sandy coasts of southern England and Wales, mainly in the west. This is the first record in Somerset since Dunster in 1916.

Callicera aurata (Rossi) South bank of the River Avon, Cumberland Basin, Bristol (vc 6) ST568 721 2 August 2010 Tony Cotterell, one photographed. First record for the Bristol region.

Criorhina ranunculi (Panzer) Lower Littleton, Bath & NE Somerset (vc 6) ST559 636 3 May 2010 Richard Mielcarek. A bumble bee mimic hoverfly which is often overlooked.

Lucilia silvarum (Meigen) Chew Valley Lake, Bath & NE Somerset (vc 6) ST578 608 1 September 2010 Jon Mortin. Few records locally of this sparsely distributed (or recorded?) species.

Chilipoda (centipedes)

Scutigera coleoptrata (L.) Weston-super-Mare (vc 6) ST3 6 18 April 2010 Peter Noyle, one found alive in the recorder's kitchen. Presumably accidentally introduced on goods purchased with a European origin.

ARACHNIDA (spiders)

Spitting Spider *Scytodes thoracica* (Latreille) BRERC Offices, Central Library, College Green, Bristol (vc 6) ST582 726 Jon Mortin. A species of caves and also houses and offices.

Cow Parsley

Phenology 2010

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2010 was the coldest year since 1996, had the coldest January since 1987, the coldest November since 1993, and the first November snow since 1952, followed by the coldest December since 1916. It was the driest year since 1978, but had the wettest August since 1992.

All the data used derive from a standard walk across the Downs done every week by myself, recording all plant species in flower, and events such as tree bud-break, and leaf fall.

	Winter	Spring	Summer	Autumn
2010	5.7C	14.3C	21.6C	14.2C
Average	7.5C	13.0C	20.2C	14.0C
Std	1.4	1.0	1.3	1.1
Difference	-1.8	1.3	1.4	0.2

Table 1 Seasonal temperatures 2010 compared with the average since 1853 and the standard deviation.

Spring events

(In the charts that follow the dates on the Y axis are give in Julian days, ie days after January 1st. It helps to remember that April 1st is Day 90, June 30th Day 181, Nov. 1st Day 305).

Chart 1 shows the average date on which 18 spring flowers came into bloom. Their average first date varies between day 17 (Jan. 17th) for Hazel Catkins, to day 144 (May 24th) for Dog Rose, which have all been recorded annually on the Downs since 2000. The chart shows that 2010, with an average date of day 100 (April 10th) was almost as late a spring as 2006. The average date for these events over eleven years is day 83, (March 24th) so 2010 was 17 days late. The events recorded include the first flowering of Celandine, Alexanders, Blackthorn, Wild Cherry, Sycamore, Cow Parsley, Elder and Hawthorn . Seven of the events occurred on the latest date yet recorded, including all the earliest four, Hazel Celandine, Prunus and Daffodil, because it was the coldest January (average maximum 4.1C), and the coldest winter (Dec., Jan., Feb.) since the survey began in 2000.

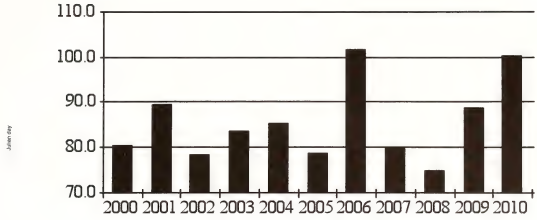

Chart 1 Average date of 18 spring events, 2000-2010

Chart 2 shows the relationship of these events to the winter temperature. Roughly speaking a one degree centigrade change in the average temperature of the three winter months is associated with a seven day change in the average date of spring events. Each species will react in its own way to temperature but the general pattern is clear.

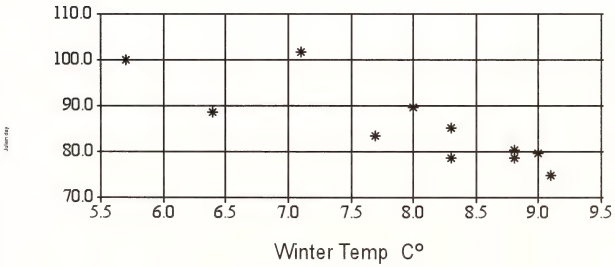

Chart 2. Relationship of winter temperature to average date of spring events 2000-2010 The 2010 point is on the extreme left.

Autumn events

Leaf fall

Chart 3 shows the average date when 18 tree species became bare between 2003 and 2010. A number of factors affect this, including temperature and rainfall, but both storms and early frosts can have a marked impact. The autumn of 2005 was both unusually warm and very wet, 2006 was warm but with average rainfall. 2007 had average temperature but was dry, 2008 was colder, but with more rain. In 2009 leaves fell two weeks earlier than the previous average because rainfall in August and September was so low. In 2010 the temperature was average, and rainfall low.

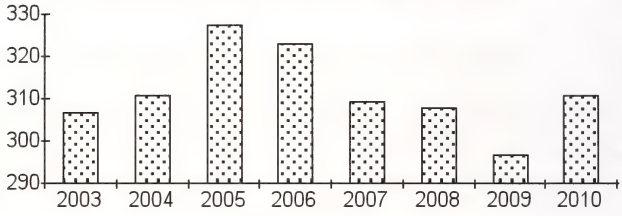

Chart 3 Average date when 18 species became bare, 2003-2010

Tree active life.

By comparing the average date of bud burst with the average date of becoming bare one can calculate the average active life of tree species. This will affect the overall ring width for each year, and thus the growth rate in the girth of a tree. Though most trees manage to flower every year, some do not, and this must be related to the plant's basic physiology. The annual seed harvest of each species varies every year, in part dependent upon the weather in the course of the year, and in part on the amount of blossom produced. In 2010 the average active life of ten species was 208 days, below the average since 2000 of 217 days because of the cold January and hence late spring. Chart 5 shows the correlation between average active life in days and the average of January and October temperatures. A degree difference in temperature shows a change of ten days in the average active life of the tree.

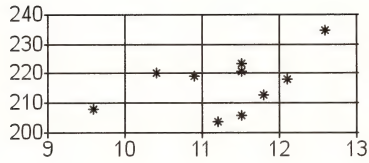

Chart 5 Average active tree life for 12 species compared with the average of January and October temperature. The 2010 point is the extreme left one.

Survival.

Since the New Years Day survey began in 2000 45 species have been found in flower on the Downs, though the maximum in any year has been 25. On Jan 1 2010 only 11 species were in flower, the lowest total since 2000, though one, Rock Rose, was new. Three species (Adria Bellflower, Daisy, and Gorse) have been found every year, and 16 species have only been seen once. However the exceptional cold of December 2010, which included nineteen days of snow cover, had the consequence that only three species were in flower on Jan 1st 2011, Daisy, Ivy and Gorse.

Dormancy

In most winters almost all species cease flowering at some point, but a few survive throughout the winter. Records from the last ten winters show that Gorse is the only species that has been in flower continuously from the start of October to the end of March in every winter. In 2010-2011 even Daisy had weeks when it was not flowering. Chart 6 shows the relationship between the number of species that never became dormant and the winter temperature. Both 2006-07 and 2007-08 were very warm, with winter temperatures of over 9C, and a total of 14 species survived continuously in 2007/08, including Mexican Fleabane, Green Alkanet, and Smooth Sowthistle. However the three winters starting in 2008/9 were cold, the 2009/10 winter being the coldest since 1995/96, and 2010/11 included the coldest December since 1916, so that in 2009/10 only two species survived and in 2010/11 only one.

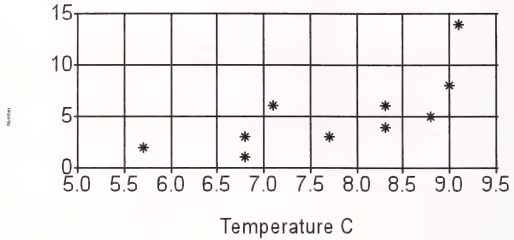

Chart 6 The relationship of the winter temperature to the number of species in flower throughout the winter. The 2010/11 point is the extreme left one.

Since 1879 there have been nine harsh winters with an average of below 6C, and the average gap between them has been 14 years. There have also been 22 winters with an average of over 9.0C. The pattern is interesting- between 1860 and 1910 there were only three warm winters; 1910-1960 had twelve, and in the past fifty years there have been nine. The thirty year winter average maximum temperature climbed from 1890 to 1950, then dropped a little to 1992, and has since almost climbed back to the previous level. From the point of view of being forced into dormancy there appears to be a considerable difference between a winter with an average of over 8.0C and one below it. Should winters become warmer the ability of some species to flower continuously should have an impact of plant populations.

Philip John Morton Nethercott (1918 – 2011)

P. J. M. Nethercott was Hon. Treasurer of the Bristol Naturalists' Society from 1958 to 1992 and was a botanist of local and national standing. In 1982 he was made an Honorary Member for his outstanding work for the Society. He passed away peacefully at the Rhalt Nursing Home, Welshpool on Saturday 9 July 2011, aged 92 years. His cremation on 26 July 2011 at Emstrey, Shrewsbury was followed by a service at St Michael's Church, Chirbury. He is survived by his younger brother Stephen.

As the 2010 *Proceedings* go to press, two of our members have combined to provide an appreciation of his work for the Society and of his botanical interests. Although not a formal obituary, the authors hope it helps fellow members of the Society to remember him; and for those who may not have known him, they hope it paints a picture of this Bristol Naturalist and Bristol Botanist. We hope to publish a photograph of him at a later date.

Roger Symes, the Society's Archivist, writes on Philip Nethercott, *Bristol Naturalist*

Philip Nethercott joined the Bristol Naturalists' Society on 17 March 1952 and was thus a member for 59 years; and for some 34 of those years he was a significant contributor to the Council of the Society as Hon. Treasurer, with responsibility also for membership. His main interest and expertise was in botany, but he attended indoor and field meetings of various sections and also General meetings, and he was a leading light in the Library Committee until his later years.

Philip was a private individual and it has therefore been difficult to find sources that might shed light on his upbringing or to indicate what stimulated his interest in natural history in general and botany in particular. However genealogical information in the public domain indicates that he was born in Bristol to Philip Edward and Alice Ada Maud (née Evans) Nethercott and that his father, who died in 1933 on a services pension when Philip was about 15, had forebears from Dulverton, an old village on Exmoor.

It has been possible to trace Philip as a passenger with other family members on the Southampton/Cape Town Royal Mail steamers no less than three times, twice in 1922 and once, returning, in 1927. However, the duration of their stays in South Africa and the underlying reasons require further research, along with details of Philip's education and, in that most defining period of a young man's life in those days, his wartime service.

He ultimately became a solicitor in Bristol with Tanner, Vowles and Cheshire, working at their offices in Richmond Hill, Clifton, where he could observe the comings and goings of a rare and long-established alien hawkweed on the garden walls. Our records show that Philip lived in at least four addresses in Bristol, all close to the Clifton and Durdham Downs. Philip used to travel to Shropshire regularly to be with his brother (Albert) Stephen, and also until 1988 with his mother, who was by then a centenarian.

The Minutes of Council for January 1958 indicated that "*the Treasurer Mr Peach was retiring due to ill health after many years of devoted service*" but no successor had been identified. The Council Minutes of 25th September that year recorded "*...it was noted that Mr PJM Nethercott had expressed his willingness to succeed the Hon. Treasurer. He was proposed and seconded and elected unanimously.*" Philip attended his first Council meeting in October 1958, and so joined Mike Taylor (who died a year ago) and Brian Frost, who happily survived being hit by a motor car recently and is still a member of Council as our Bulletin Distribution Secretary.

As Hon. Treasurer Mr Nethercott (Council members were then addressed by surnames) was meticulous in his record keeping and in his budget forecasts. All his records and financial statements were written in manuscript, but he did acquire a computer later in his life. When responding to questions he exhibited some of his legal expertise, gaining time by pausing and exclaiming "Well ..." before providing a detailed answer. It could apparently be rather similar when he was faced with a difficult plant specimen to name. The Society was most fortunate to have his guidance when charitable status was being sought.

Two Society matters particularly seemed to rouse Philip's passions. He was very concerned to ensure that the Society's finances were presented on time to Annual General Meetings. He scrutinised and questioned them closely but nonetheless generally managed to complete and sign off the calendar year accounts before two weeks had elapsed in the new year. His other concern was over production of the Society's Proceedings. He was insistent that the Proceedings should be produced on time, and he hounded the Editor of the time if there was likely to be any delay. His concern related to quality of Society information, and particularly to having the bill for the journal presented in time to include in the current accounts.

When Philip eventually retired as Treasurer in 1991/92 his role was split into two, with Mike Taylor taking over Treasurer's duties and a new post of Membership Secretary being taken on by Mrs Ann Wookey, whose recollections are quoted below.

"I knew that Mr Nethercott would be a hard act to follow, but his meticulous record keeping and comprehensive and informative notes made taking over the membership duties much more straight forward than I had expected, although how he had managed to be Treasurer as well amazed me! Each member's details, including civil and academic qualifications, were hand written on 5 x 3 inch record cards and their subscription payments recorded annually. When a member resigned or died the reverse side of the card was used for a new member. These record cards are now held in their original box in the Society's archives.

Whilst I was Membership Secretary, and later also President, I did get to know Philip perhaps a little more than some others, who seemed to find him difficult to engage in conversation. Once the initial contact had been established I found talking with him very worthwhile and he would tell me about his trips to Shropshire to see his brother. He regularly attended Annual General Meetings where his attention to detail and continued interest in the Society's finances was obvious in his close questioning of the Treasurer."

Philip had a great interest in natural history books and had a significant collection of his own. He was very much involved with the Society's Library, serving as a member of the Library Committee for much of his period of membership. He seemed to be familiar with all the books and journals in the Library and would regularly propose books for purchase, when he would often reveal that he had already bought one for his own collection. He worked tirelessly on organisation and cataloguing of books and was a tower of strength, with others, when the entire Library collection had to be re-housed to the University for a couple of years (and then returned) to allow decoration of the Library room in the City Museum.

In 1992 to recognise his retirement as Treasurer and as an expression of gratitude for all that he had done for the Society, a collection was made without his knowledge and he was presented at a social event with a paperweight engraved with the Society's crest and, it seemed to his embarrassment, with a cheque for over £400. It was amazing that the lady who was approached to engrave the paperweight instantly recognised the name as she had worked with him some years before. It is ironic for such a meticulous man that Philip should have been recorded in the Minutes in 1952 on joining the Society as Mr P.J.M. Neathercott, and in his death notice in the Bristol Evening Post as Philip Nettercott. He would never have missed such editing errors.

Clive Lovatt, a regular contributor to the Society's Bulletin on the History of Bristol Botany, writes on P. J. M. Nethercott, *Bristol Botanist*

Mr Nethercott joined the Bristol Naturalists' Society in 1952, initially being interested in birds. In the Ornithological Notes in the *Proceedings* that year he was one of those credited with sightings of Kingfishers. In 1954 he noted a Buzzard near Cheddar and then and in 1956 he reported observations of the nesting and breeding performance of Wheatears on Wavering Down. He also reported a Cormorant overflying the Avon Gorge, this place of constant surprise to the enquiring naturalist which for so long retained a fascination for him.

By 1956, the die of the botanist we knew was already cast: he was a close and careful independent observer with a strong sense of the historical and geographical context of our local wild plants. In *Bristol Botany* that year as one of his first plant records he noted the orchid *Epipactis helleborine* on a wooded slope of Durdham Down, a place from which it had not been reported since 1799.

But perhaps more significantly, at least for the more public profile of this private man, he was making good use of the recently published and inspirational *Flora of the British Isles* by Clapham, Tutin and Warburg (1952) and adding to the understanding of the intricate variety of whitebeams to be found in the Avon Gorge. The following year he joined the Botanical Society of the British Isles and from 1966 and for many years he was their national *Sorbus* (whitebeam) referee.

In a letter dated November 1956, a fellow Bristol Naturalist, George Garlick from Yate wrote to Noel Sandwith, the Kew botanist and co-author (with his mother) of *Bristol Botany*, and reported some Leigh Woods localities which had been confirmed by Dr Warburg, the British whitebeam expert of the day: "in Quarry 3...*Sorbus eminens*, *S. porrigentiformis*, *S. bristoliensis* and *S. aria* rub shoulders together". He added, "Mr Nethercott (he is a member of the BNS whom I know by sight but never before by name) has also submitted samples of *S. porrigentiformis* and *S. eminens* from the Glos side for Dr Warburg's approval and had them passed".

Mr Nethercott (and how few of us could speak to him on first name terms?) was long a member of the committee of the Botanical Section of the Bristol Naturalists' Society. He never, so far as I am aware, gave us an indoor lecture or presentation: the countryside was his theatre. He must have led about fifty field meetings for us, sometimes as many as three in a year, and probably a dozen or more for kindred societies. These were most commonly in or about the Avon Gorge, or on the limestone downs of the Bristol region, or in their nearby woods, but he was also at home on the peat moors and along the coast.

He also led meetings to Steep Holm and several times into South Wales. In 1984 he led a 350th anniversary walk, following in the footsteps of Thomas Johnson, an apothecary responsible for the updating of Gerard's *Herbal*; some of the plants Johnson had recorded were shown to be still present.

Over some 50 years, Mr Nethercott made many contributions to the annual *Bristol Botany* report in our *Proceedings*. His were selective and consequently rather few but they were generally of the first order. One could mention his observations of the less common rose species and hybrids on the limestone (1985), and finding *Carex humilis*, the Dwarf Sedge, on Crook Peak (1964) and later Cross Plain (1985) and *Geranium sanguineum*, the Bloody Cranesbill (1967, not seen there for 80 years) and *Aster linosyris*, the Goldilocks Aster on Brean Down (1965, locality suppressed). Alien species were consistently only reported where they were intrusive in the landscape, for instance *Viburnum tinus*, Laurustinus, (1956) and the Red-hot Poker (1975), both in the Avon Gorge.

Despite the paucity of records preceded by his initials P. J. M. N., the late Professor Willis would normally acknowledge Mr Nethercott for his help with the compilation of *Bristol Botany* over his near 40-year tenure. Being for most of the period non-resident, Willis would no doubt have relied on Nethercott's expertise and local knowledge to weed out errors and to prevent the inclusion of information which was really of little value. In this respect we look forward to a critical review of the two cardboard boxes of papers left by Willis to our Society, with the correspondence and notes pertaining to the annual botanical reports.

In 1959 Mr Nethercott joined the British Lichen Society and the British Bryological Society, and he assisted in leading their Leigh Woods meeting in 1963 and in preparing for publication the list from the foray of national experts. A few of his own bryophyte records appear in *Bristol Botany*, and show evidence of repeated observation.

He is mentioned as a contributor to several of the local floras published in his lifetime, of Somerset (1981 and 1997) and Bristol (2000), though with the exception of the first, it is likely that his records were of specific finds made independently, rather than complete lists of one or more recording square.

Like many a naturalist, Mr Nethercott was also a book-lover. He could be seen, bespectacled and if the weather required it in a fawn raincoat and holding his hat, quietly scanning the shelves of George's at the top of Park Street weekly in the late 1970's as new stock came in; and even in recent years, antiquarian book fairs still attracted him.

Little though is known of his book collection or indeed of any notebooks or specimens he may have retained. Once when out of necessity our botanical committee met at his apartment, it was possible to see a glass covered bookcase in the narrow corridor full of immaculate *New Naturalists*, all in numerical order. One of us was once brought out a copy of the Bath botanist William Sole's exquisite *Menthae Britannicae* of 1798.

Mr Nethercott had the interests of conservation at heart but perhaps in the sense of preserving the historical connections of plants and places. He himself put it rather well in a letter to the *Economist* in 1965: "*there are still too few people in Britain who will dispute industry's claim to devour our natural heritage*" - for such was then the case. He was a founder and Life Member of the Somerset Trust for Nature Conservation and was also long a member of the National Trust and their now defunct Leigh Woods Committee of Management, of which he was chairman from 1987 to 1993.

In the May 1974 edition of BSBI News, Mr Nethercott firmly expressed his views on the conservation of British rare plants, on learning that they (the Botanical Society of the British Isles) intended to publish a poster showing some twenty of Britain's rarest plants and fearing that it would stimulate (as he put it) inflated curiosity: "*Not all wild flower students can be trusted to refrain from collecting, nor, worse still, from broadcasting indiscriminately among friends information where such rarities are.*" It was therefore something of a privilege that in the late 1970's we looked together (albeit unsuccessfully) for the persistence amongst overgrowth of *Cotoneaster* of what may have been the site of Brunel's pioneering transplant of *Scilla autumnalis*, the Autumnal Squill, high on St Vincent's Rocks near the Suspension Bridge, where he had seen it some years earlier. Another Avon Gorge plant, a survival of over 200 years and in some danger of being trampled on or buried by over-enthusiastic felling of alien pine trees, he showed me for safety's sake. Freed from shading, it now flowers regularly.

I believe he helped in the removal of a tree of *Sorbus porrigentiformis* from Sea Walls on the Bristol Downs in 1974 when safety works were going on at Black Rocks. It did not survive and over the years he witnessed more failures in conservation: it is only now clear with the application of modern methods of survey and taxonomy that the population numbers and diversity of the whitebeams of the Avon Gorge and elsewhere were underestimated during his stewardship.

In his interest in the local whitebeams, Mr Nethercott takes his place: Martha Atwood, Thomas Flower, James White, Charles Salmon, Alfred Wilmott, Max Walters, 'Heff' Warburg, and Philip Nethercott. But as White had written, there is no finality in field botany, and it is the keen anticipation of discovery that stimulates each fresh generation of workers to outdo those that have gone before. What did he make of the monograph of British *Sorbus* published in 2010? He was well aware of un-named variation in the various whitebeam populations but also had his opinion that not all variants were worth naming. He had once shown Dr Warburg fresh specimens of plants resembling *Sorbus eminens* from Cheddar, but they were not confirmed. In deferring to Warburg's taxonomy as he continued to do, he was left wondering if they were therefore a distinct species.

Libby Houston, who described to me a visit Mr Nethercott once made to her house when she showed him some of her putative new species (some of which he appeared reasonably convinced by), suggests that it probably was *S. eminens* - which turns out to be rather common at Cheddar - after all.

Despite his scholarly - or perhaps, bookish - manner, he published little: in 1998 there appeared a few pages on the conservation status of *Sorbus* in the Avon Gorge, issued after a conference at Kew covering the subject from a national perspective at which he had spoken. It was entirely in character that he described to the listeners the population size of *Sorbus wilmottiana*, Wilmott's Whitebeam as "x, where x represents a very small number indeed". There are also a couple of papers in our *Proceedings*, one (1973) describing his collation of the newspaper reports and off-prints making up the First Series of the *Proceedings* (1862-1865) and the other bringing out the local interest in Knapp's *Gramina Britannica* of 1804 (1976). He also researched and wrote a number of members' obituaries.

Mr Nethercott was a quiet man, and, like Noel Sandwith, he remained unmarried. Perhaps it was as Sandwith explained of himself when rudely pressed, because he *so loved the flowers*; and Mr Nethercott also loved the woods and the trees. Thus it was perhaps fitting that his last contribution to *Bristol Botany* (for 2004) was again a tree, and again from the Avon Gorge, which he could overlook from his apartment at Sneyd Park. I had respectfully commented after the old proverb, *Bristol men sleep with one eye open*, that I must have passed the place asleep, with one eye cast down; Mr Nethercott was a closer observer.

A comparison with the botanist Thomas Bruges Flower (1816-1899) of Bath and Clifton, himself something of a successful discriminator of the whitebeams of the Avon Gorge, is almost inevitable. J. W. White, the author of the *Flora of Bristol* (1912) described Flower as "punctilious, precise and extremely neat" and "singularly wary and cautious, evading ...any kind of cross examination". So too it was with Mr Nethercott. Interested visitors were taken around Leigh Woods, and armed with a sheet of leaf prints they were introduced to the diversity of the whitebeams as then accepted; but they did not wholly succeed in marking the sites accurately on maps.

Thus it took me many years to relocate the rare natural hybrid of the Rowan and the Common Whitebeam he had shown me on our first meeting in 1977. And it was to that place I returned, by chance, on the day Mr Nethercott passed away. We had both been *there and back again.*

Herb Robert

One of the key aims of the Bristol Naturalists' Society is to maintain records of the Flora and Fauna of the region, and to ensure that these records reach the appropriate local and national bodies. This process has become vastly more efficient with the development of the web in the past few years, but it has also become more complex as a variety of organisations compete for records.
National Organisations involved in survey work include the British Trust for Ornithology, the Botanical Society of the British Isles, Butterfly Conservation, Mammalaction, the British Mycological Society

Locally The Bristol Environmental Record Centre (BRERC) www.brerc.org.uk collates and maps all records of all species, sends them on to the national NBN, and makes them available to all those who need them, and all recorde received from BNS members go on to BRERC. BRERC runs a series of Recording Groups; the Avon Reptile and Amphibian Group, The Avon Butterfly project, the Bristol Region Dragonfly Recording Scheme, The Bristol and District Moth Group, the Bristol and District Hoverfly Group.

Ornithologists are involved in both national and local survey work, and records of common birds should be sent electronically in excel to Richardbland@blueyonder.co.uk for includion in the Avon Bird Report. Rare bird records should be sent to John Martin at Avonbirdrecorder@googlemail.com
Plant records should be sent to pammillman2@yahoo.co.uk for inclusion in the annual Botany record. Rare plants in North Somerset are the responsibility of Helena Crouch at helenacrouch@sky.com and in South Gloucestershire of Clare and Mark Kitchen, markarkitchen@yahoo.com
Veteran Tree Records are being collected by the Woodland Trust at www.woodlandtrust.org.uk
Phenology records should be sent to www.naturescalendar.org.uk
Lichen records should be sent to David Hill at d.j.hill@bris.ac.uk
Insect, reptile and amphibian records should be sent to Ray Barnet at ray.barnett@bristol.gov.uk
Bat records should be sent to Bob West at recorder@avonbatgroup.org.uk
Mammal records to David Brown at batnovice@gmail.com
Fungi and Slimemoulds are the preserve of Justin Smith at justin.smith@bristol.gov.uk or at home justinhongos@yahoo.co.uk
Mosses and Liverworts records should go to Nick Hudson at nick.hudson@hudec.co.uk
The Botany section have established a Lower Plants Group which includes Ferns, Mosses, Lichens, and Horsetails. Details from Nick Hudson

Organisation

At the AGM on Saturday, June 29th 2010 the following elections were made:

Bland Mr. RL	President.
Muston Mr. R.	Honorary Secretary
Symes Mr. RG	Honorary Treasurer
Wookey Mrs. AM	Membership Secretary
Davies Mr. DB	Bulletin Editor
Leivers Ms. M	Publicity
Taylor Mr. SM	Archivist
Strawford Mr. DWR	Webmaster
Webster Mr. J	Librarian
Barnett Mr. R	Invertebrates
Hudson Mr. N	Botany
Steer Mr. R	Geology
Johnson, Mr. MS	Ornithology
Corner, Mr. T.	Member
Morris, Mr.HG	Member
Pocock Dr. M	Member
Hilton Mr.P	Member

Society membership stands at 505.

The tone for the year was set by a special Council meeting in January which set in motion groups whose advice led Council to alter the Constitution, decide upon a Mission Statement and Strap-line, establish a series of clear goals, improve the monthly bulletin, and create a new Website.

Mission Statement
To study the biodiversity and geology of the Bristol Region through talks, field meetings, and environmental recording, supporting these activities with publications and grants.

Strap line.
Discover your natural world

1 The Annual General Meeting was held on 29th June 2010, at 7.30pm at the Guide Association Hall, Westmoreland Road.

The President, Mrs Ann Wookey welcomed 37 members. The Treasurer's report was approved by the meeting. The Treasurer, Mr Stephen Fay and the accounts examiner, Mr Ray Gooding, were thanked for their work.
Award of Honorary Membership of the Society The President proposed Mr Richard Bland should be awarded Honorary Membership of the society in recognition of his distinguished services to Natural History in the Bristol District. This was unanimously approved by the meeting, and a Certificate was presented. He was then elected as President and other officers were elected *en bloc.*

New Constitution Copies of the new Constitution and rules had been circulated earlier and were adopted unanimously.

2 Grants. In 2010 the Society made ten separate grants totalling £4,072. Funding was provided for the following research projects; The Swallow Cliff geology project; Rings for Peregrine falcons; A dormouse research project in Leigh Woods; Leaflets for the Downs lichen trail; A bat research project in south Bristol.
Grants were also made towards; The Henleaze Phoenix hedge appeal. The St George's flower bank appeal. The Nailsea Environment and Wildlife conservation appeal.
Funding was also provided to BRERC for the purchase of a card index cabinet for bird records.

3 Library. 2010 has been an important year for the BNS Library with the purchase of a new computer, which has set in motion the modernisation programme, starting with bar coding of all books. Over the last fifty years the BNS has changed greatly, which has required a re-evaluation of the value and purpose of the library. An additional consideration has been the shortage of space to properly store all the books and journals which have accumulated over the last 150 years. After much thought and debate it was decided to limit the scope of the library, as far as journals were concerned, to an area which could be visited by a BNS member within a days travel. Sadly this has resulted in the breaking of long standing, if tenuous ties, with other Natural History organisations abroad and in Britain. Space will be gradually created by disposal or relocation to other organisations of old runs of journals deemed not to be of value to either existing or future BNS members. The Library Committee is committed to providing an attractive and organised display of the modern Natural History and Geology lending books, while at the same time carefully storing older "heritage" books and intellectually valuable journals in less accessible areas reserved for serious researchers. In addition, there is a lot of historically valuable material which has been identified for careful preservation by the archivist.

4 General Meetings. In September 2009, Bill Morris, former society president, spoke of his experiences as a Natural Trust Warden in Leigh Woods, and the conservation wok which was being carried out there and in the Avon Gorge Itself. The following month, we were visited my BernardTapp who gave a vivid talk Patagonia and Tierra del Fuego. This was accompanied by a sequence of magnificent photographs. In December our booked speaker was ill and one of our members, Peter Rendle, stepped in at very short notice to give a slide show of his recent visit to Antartica. In February Vassili Papastavrou, a whale biologist for IFAW (International Fund for animal welfare) spoke on Whales and Whale migration. Vassili's fee was for the Society to fund that planting of an English Oak in the grounds of St Nicholas of Tolentine Junior school, BS5 0TJ

In March, Martin Davis, author of "The Farmer and the Goose with the Golden Eyes" spoke of his father Howard Davis who was a local farmer and prominent local ornithologist, who introduced Peter Scott to Slimbridge. He was also the originator of what is now the "Avon Bird Report".

5 Section reports

Botany. The Botany Section had an interesting and varied year in 2010. Our indoor winter programme included talks on the flora of the Lizard and rare plant conservation. The year's outdoor events started with a trip to the Forest of Dean followed with a March bryology trip to Leigh Woods. In April Pam Millman showed us the flora of Burwalls and May saw trips to Kings Wood and the Avon Gorge. During June visits were made to Max Bog looking for locally scare mire plants, Stockwood Open Space which has an abundance of Bath Asparagus, the AWT Walborough Reserve and grass species on the Downs. July was the busiest month with visits to Priddy Mineries, Bristol University Botanic Gardens, Sand Bay and several other local trips. Late in the month saw us leave the Avon area to visit Kenfig NNR in search of the rare orchids found here. In August we made a visit to Iron Action to search for Climbing Corydalis amongst others trips. A further 4 meetings were held covering a wide variety of subjects.

Geology. The Geology Section has had an interesting and varied year. We have had four outside speakers with talks on geology subjects from far and near;- The Afar Valley of Ethiopia, which is the site of a proto-ocean that is in the process of opening over the next few million years (watch this space!); The work of the Gloucestershire Geology Trust; Geographical Information Systems; and the collections of the Bath Royal Literary and Scientific Institution, with details of the Strawberry Bank, Ilminster, Jurassic fossil bed.

There was a members' evening with a chance to see the crinoid panel that Simon Carpenter is working on. There were fieldwlks in the Mendips, S. Glos. and around Saltford. Further talks and visits are planned for 2011, including a very interesting update on recent dinosaur research, by Mike Benton and a projected visit to Bath, for a specially organised meeting to see the, normally un-displayed, Strawberry Bank fossils.

Invertebrates. Ray Barnett and Tony Smith were re-elected Honorary President and Honorary Secretary, respectively at the AGM held at the Guide Association Hall, Westmoreland Road. Bristol. A fairly limited programme of meetings was held because of shortage of volunteers and experts available to lead walks and give talks.
The following indoor meetings were held:
19th January Section AGM & Presidential Address on Insect pests!
16th FebruaryThe plight of White-clawed Crayfish *Maddy Rees*
3rd November Dipteran deception by odiferous inflorescences *Mark Pajak.*
and the following field meetings:
1st May Carrs Woodland, Bath *Mike Williams*
10th July Lower Woods, Wetmoor (Joint meeting with the Bristol & District Moth Group) *Ray Barnett & Tony Smith*
18th JulyChew Valley Lake Ringing Station (Joint meeting with the Ornithology Section) *Mike Bailey.*
Officers and members of the section participated in the Bristol Bioblitz held at the Blaise Estate on 21st and 22nd May and the subsequent mini-bioblitzes held at Brandon Hill (24th July) and the University of the West of England campus (20th October). The officers thank all those who led meetings.

Ornithology. 2010 has been a year packed full of exciting trips to Bristol's birding hotspots. Throughout the year the team led 18 field trips from the Forest of Dean to Cheddar Reservoir, and Oldbury Power Station to the Somerset Levels. Members caught up with some of our scarcer farmland birds in Marshfield in February while a hunting Peregrine at Newport Wetlands provided exclusive views of this remarkable predator in May. Additionally, in the Forest of Dean in June, nightjars revealed some rarely seen mating behaviour. Members were entertained and absorbed by our three indoor presentations on storm petrels, house sparrows and the Cotswolds Water Park. We took part in various field surveys including monitoring blackcaps, listening for screaming swifts and counting birds for the BTO's bird atlas work, of which most squares are now complete.

6 Publications. The Avon Bird Report was published in October, with eleven papers and some remarkable photos. Nature in Avon was published in November with ten original papers. The monthly bulletin carried out a series of experiments with a changing format and the use of photographs. Much effort was spent in building a new website.

7 Archives Much of the archives, which include records of meetings and committees, and contributions from members, such as notebooks, collections, photographs, and mementoes, have now been entered onto a database. A remarkable recovery was of the epidiascope purchased in memory of Miss Ida Roper. Council authorised expenditure on refurbishing the projector and the Society is grateful to Ray Gooding for undertaking that restoration and for scanning some 2000 3 x 3 inch glass slides onto computer files. Michael Taylor (Archivist) died during 2010. Mike had great historical knowledge of the Society, and had made considerable progress in identifying items, and in proposing a structure for the collection. Council agreed a working protocol for the future management of the archives, and authorised the transfer to the Bristol Record Office of materials from the Bristol Microscopical Society and the Bristol Botanical Club, which are now available for public consultation.

8 Publicity. In March the 'Wild Sparrows Survey Project' was launched and received excellent publicity via newspaper and internet articles as well as radio interviews. This Bristol Biodiversity Action Plan initiative was organised by Avon Wildlife Trust with support from the Society, Bristol City Council and the Avon Gorge & Downs Wildlife Project.
The Society attended the Bristol Festival of Nature in June and the society was represented at the University Botanical gardens Bee event over August Bank Holiday.
Later in the year, two successful public 'taster' events were organised to encourage new members. A press release was issued advertising the 'Identifying birds at Chew Valley Lake' and 'Identifying trees in winter' events.
.With the aim of attracting new members, posters advertising Society events were produced on a regular basis and displayed in libraries. The Society's website was also re-designed. It now has an inviting and contemporary look.
The Geology Section also set up a blog on the 'Geology in the West Country' website.

Relations with other organisations. The Society sends its records to the Bristol Environmental Records Centre, and supports the Avon and Bristol Biodiversity Action Plans. It is closely involved with the Avon Wildlife Trust, and its last Garden Birdwatch survey, and its new Sparrow survey. It is involved with the city Environmental Officer and the monitoring of the Avonmouth Wind Turbines, and carries out surveys for The British Trust for Ornithology, and the RSPB.

Membership. At the end of the year there were 503 members of the society. In the course of the year two former Presidents died, Mrs A Hollowell and Mr SM Taylor, and we also lost Dr WE Stanton, Mr F Bryant, Mr TM Silcocks, Mrs J Philips, and Mr RG Winn.

Thanks. The Society is grateful for the help and support it received from the Earth Sciences Department, University of Bristol, and Mr Mark Moore, Headmaster of Clifton College, for the use of their premises for meetings, and Ms. Kate Brindley, Director of Museums, Galleries and Archives, Bristol City Council, for continued support of the Society Library located within the City Museum & Art Gallery. It is also grateful to all those members of the society who gave so willingly of their time and energy in the course of the year to support the aims of the Society.

Spotted Medick

BRISTOL NATURALISTS' SOCIETY

	2010	2009	
INCOME (Incoming resources)			
Membership Subscriptions	6894.50	6,800.50	*
Gift Aid	1150.63	1,061.93	
Bequests & Donations	1,201.00	2,705.31	
Trading	61.34	187.78	
Interest Received	125.09	379.20	
Miscellaneous	0.00	0.00	
Total	**9,432.56**	**11,134.72**	
EXPENDITURE			
(A) Direct Charitable			
Meetings (Room Hire & Speaker Costs)	1,149.86	1,036.96	*
Books & Periodicals (Library)	848.34	524.05	*
Nature in Avon (Proceedings)	1,645.00	1,545.00	
Avon Bird Report	1,575.00	1,750.00	
Bulletin Production	1,142.27	1,396.30	
White Sheet Production	44.00	92.00	
Publications Distribution Costs	1,292.27	1,235.40	
Subscriptions to other Organisations	138.00	230.00	
Publicity	1,370.05	280.68	
Grants Awarded	4,072.30	450.00	
Total	**13,277.09**	**8,540.39**	
(B). Administration			
Print & Stationery	174.74	118.05	
Postage & telephone	138.45	329.12	
Council Meetings (Room Hire)	150.00	200.00	
Insurance	137.65	141.05	*
Miscellaneous	2,235.36	140.67	*
Total	**2,836.20**	**928.89**	
Operating Surplus (Deficit)	**-6,680.73**	**1,665.44**	*

BRISTOL NATURALISTS' SOCIETY

BALANCE SHEET AS AT 31 DECEMBER 2010

	Notes	2010	2009
ASSETS			
Current Assets			
Prepayments	1	609.53	513.83
National Savings	2	12,332.84	12,276.48
Bank (Lloyds)		472.63	237.43
Bank (CAF)	3	28,965.66	36,081.15
		42,380.66	**49,108.89**
LIABILITIES			
Creditors			
Subscriptions Received in Advance		113.00	160.50
		113.00	**160.50**
Total Assets less Total Liabilities		**42,267.66**	**48,948.39**
CAPITAL			
General Fund 31/12/2009		43,755.76	43,755.76
Net deficit 2010		-6,680.73	
General Fund 31/12/2010	4	37,075.03	
150th Anniversary Fund		150.00	150.00
Restricted Funds		5,042.63	5,042.63
		42,267.66	**48,948.39**

NOTES

1 Prepayments

Meeting Rooms	275.00	
Insurance	41.57	
Periodicals	288.00	
Other	4.96	**609.53**

2 National Savings

	Restricted	General fund	TOTAL
Opening Balance	5,042.63	7,233.85	**12,276.48**
Interest Received		56.36	**56.36**
Closing Balance	**5,042.63**	**7,290.21**	**12,332.84**

3 CAF

	General Fund	150th Anniversary Fund	TOTAL
Opening Balance	35,931.15	150.00	**36,081.15**
Interest Received	68.73		**68.73**
Transfer to Lloyds	7,182.82		**7,182.82**
Transfer charges	1.40		**1.40**
Closing Balance	**28,815.66**	**150.00**	**28,965.66**

4 General Fund

Bank (Lloyds)	472.63	
Bank (CAF)	28,815.66	
NS & I	7,290.21	
Prepayments	609.53	
Creditors	-113.00	**37,075.03**

Instructions for authors

The editor welcomes original papers or short notes on the natural history of the greater Bristol region for consideration for publication in Nature in Avon All papers for consideration should reach the editor by the end of November for publication in the following year. All Society Reports and Biota should reach the editor by the end of February in the year of publication.

Whenever possible, text should be submitted electronically in Word. The data for graphs should be sent in Excel, separately from the graph, as graphs have to be recreated to fit the page size of the journal. Any other illustrations should be submitted electronically.

The Editor welcomes digital photos of any natural history subject taken in the region, whether relevant to an article or not. They should be of the largest pixel size possible. However as the number of colour illustrations is strictly limited he cannot promise to print any.

The copyright of all newly published material will belong to the Bristol Naturalists' Society, whose Council may authorise reproduction.

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Rerum cognoscere causas - Virgil

Cover. Common Frog R Muston

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